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ABSTRACT

This general catalogue describes the University of Wisconsin at Green Bay (UWGB). This new and innovative institution has set out to "meet the challenge of a new generation of youth who will not be denied less than they have been encouraged to dream." The special focus of the UWGB academic plan is on ecology, or the study of man in relation to his surroundings. Because ecological inquiry is pan-disciplinary, UWGB has organized its colleges within the framework of environmental themes rather than grouping them according to traditional disciplines. The College of Environmental Sciences focuses on the problems of the natural environment, while the College of Community Sciences focuses on the social environment. The College of Human Biology centers its attention on human adaptability--the impingement of the environment on the individual. The College of Creative Communication emphasizes the problem of human identity, or the individual's impingement on his environment. All students are required to select an environmental problem or area on which to focus (30 hours), but may also take "options" in a specific discipline, a pre-professional program, or professional programs in business, public administration, or education. At the core of the academic plan is a 4-year series of liberal education seminars for all students. In order to serve the students, community and region more fully, sub-regional campuses are located in Fox Valley, Manitowoc, and Marinette Counties. (DS)

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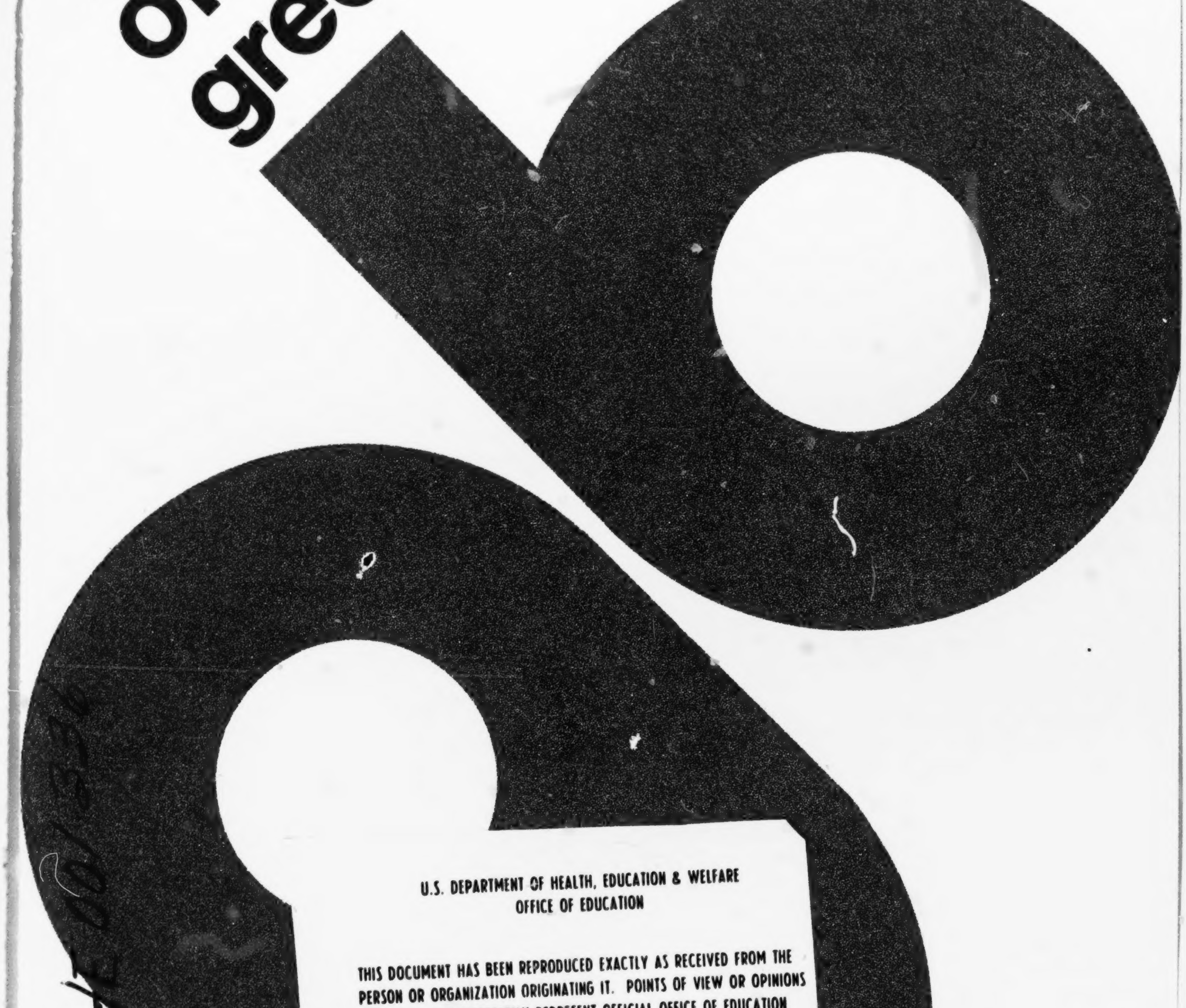

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FOR MORE INFORMATION

Inquiries about The University of Wisconsin–Green Bay are welcomed and should be directed to the appropriate office, The University of Wisconsin–Green Bay, Green Bay, Wisconsin 54305.

Admission, general information
Office of Admissions

Scholarships and other financial aids
Office of Student Financial Aids

Student records
Office of the Registrar

Academic counseling and housing information are available from the Office of Student Affairs at each campus of UWGB:

Green Bay Campus
The University of Wisconsin-Green Bay
Green Bay, Wisconsin 54305
(414-435-3211)

Fox Valley Campus
Midway Road
Menasha, Wisconsin 54952
(414-734-8731)

Manitowoc County Campus
705 Viebahn Street
Manitowoc, Wisconsin 54220
(414-682-8251)

Marinette County Campus
Bay Shore Road
Marinette, Wisconsin 54143
(715-735-7477)

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The University

A STATEMENT OF PHILOSOPHY

Meeting the challenge of a new generation of youth who will *not* be denied less than they have been encouraged to dream: this is the task that The University of Wisconsin–Green Bay has set out to accomplish.

Proceeding from the beliefs that a university cannot operate in a vacuum and that to be alive and effective it must demonstrate imaginative leadership, UWGB has implemented an academic plan that relates the student to the modern world, a plan that attempts to combine the world of books and experiences in such a way as to make the student feel his wholeness—feel that what he is *learning* and what he is *doing* have a unity and integrity validating their *relevancy.*

The Contemporary Student

The plan begins with certain assumptions about the contemporary student. First of all, he is more capable, brighter, possessed of more knowledge, and the product of a better educational system than the students of his parents' day. His advantages do not stop with higher scores on intelligence and achievement tests. He is both more cosmopolitan and more concerned with moral values.

He has been raised in a society of shrinking dimensions, of instantaneous communication, and rapid world-wide travel. The isolationism of his parents' day is anachronistic to him. He has studied about many nationalisms, competing economic and political systems, and religious, racial, and ethnic groups. If nothing else, he has seen it all on television, read about it in newspapers and news magazines.

He has reacted negatively to the kind of education offered on some campuses. He sees faculty members as not interested in and often avoiding the things that he feels are relevant. He wants to participate in the larger community at the same time that he is receiving an education at the university. Frequently his efforts have been greeted with skepticism. Perhaps in part as a result of frustration, he has turned on faculty members and members of the larger community and has charged them with being uninterested in the major problems of the day. On occasion, he has suggested that traditional university and community concerns are outmoded in the new society that needs to be created.

In shaping an academic plan for the new university which first opened its doors as a degree-granting institution in the fall of 1969, the UWGB faculty and administration took up the challenge of the contemporary student. They began questioning established modes of behavior and traditional approaches to university education. They wished to relate university education to the world of today and tomorrow, without turning their backs to the lessons of the past. They recognized that, if action were not taken soon, society seemed destined for an intensification of intellectual isolationism on the part of the university, a cultural parochialism on the part of the larger community, and an oppressive approach to ideas on the part of both.

The "Communiversity" Idea

UWGB's chancellor, Edward W. Weidner, expressed these ideas in a 1969 commencement address at Northern Michigan University. "We are in great need of a new concept of the socially responsible university to help create or contribute to the socially responsible individual and community," he said. "It is time to take a positive creative approach to relating a university and a university education to the larger society."

"To meet these objectives," Chancellor Weidner continued, "I propose that we move firmly and rapidly in the direction of a *communiversity.* A communiversity is a socially responsible university relating to a socially responsible community. The word *university* stems from the word *universe.* Too frequently, the universe has been interpreted by universities as relatively ideal to the degree that the institution manages to separate itself from the community. The communiversity defines the universal character

1-2-

of the institution's concern in different terms: by application of its resources to the living-breathing community of which it is a part."

Guidelines for an Academic Plan

This basic philosophy guided the formulation of the UWGB academic plan. Its principles and objectives are designed to facilitate a close interweaving of university and community. The most important bases of this academic plan are:

1. *Devotion to excellence.* The road to social improvement and social survival necessitates tapping the spiritual, intellectual, and physical resources of human beings far more fully than has been the case in the past. The goal of excellence is for all members of society, not just for the few directly associated with universities.

2. *Commitment and dedication.* These are not simple concepts. They also involve sacrifice, discipline, a freedom from restraint, and an expansive or experimental spirit.

3. *Involvement.* Each individual and group must be involved in the process of education. The curricula in higher education should not be as prescribed as they have been. They should be flexible and should extensively involve each student in developing his own curriculum in his own way. The same principle extends to the larger community. All elements of society should be involved in considering the need for broader social change and undertaking it.

4. *Accessibility.* To be effective, this means a thorough and continuing two-way dialogue between and among students, faculty, and administration.

5. *Relevance.* A crucial additional dimension is added to academic experience by relating higher education to today's society. As Chancellor Weidner puts it, "Liberal arts education has often been too general. It has been all things to all people. It has been themeless and formless, based upon traditional disciplines. It often has ignored cultural differences. It has frequently been aloof from the world. On the other hand, applied or professional education has often been nuts and bolts oriented, concerned with routine and detailed procedures or methods.

"Those seeking a relevant education have attacked both the traditional liberal arts and traditional professional education. Yet the criticism has often gone too far. Those emphasizing relevance have sometimes suggested that history can be ignored, that anything that is not contemporary is not relevant.

"This is patently false. Nearly all subjects in a university's curriculum can be made relevant to today's problems. Certainly history, philosophy, and literature can contribute as much to our understanding of the world as chemistry, biology, or economics. They can be made relevant, but they are not necessarily so without conscious adaptation or effort.

"Faculty members and students must cooperate in designing approaches to such subjects with relevance in mind. A university education that is relevant can result in far higher student motivation. It can result in far more understandable relationships among the several disciplines. It can help bridge the gap between the university and the outside world. It can lend a new element of excitement and meaning to higher education. But relevance does not mean putting aside everything that is not contemporary."

6. *Devotion to problem-solving.* Sharpening the student's thought processes and helping him examine his values are basic responsibilities of a university. But liberating the student's spirit is fruitless and even dangerous if at the same time the problems brought into focus by values and thought processes are not grasped more effectively. The relevant curriculum heightens the meaning of higher education by leading to a renewed emphasis on problem-solving and creating a habit of mind that is usefully extended to the community at large.

This, then, is the educational philosophy behind the UWGB academic plan. In essence, it begins with people—especially students—and the world in which they live. Such an approach leads to a highly interrelated program, one that can be advantageously carried out by theme colleges in a multi-campus environment in the Northern Great Lakes region.

Most broadly, the academic plan assumes the importance of student commitment and involvement—commitment to and involvement in the world about which they seek to learn, commitment that leads to a concern for society and its constructive improvement. The preservation, use, and betterment of natural resources; the development of man's urban environment; new opportunities for self-expression in an ever more complicated world—these are a few of the concerns to which the committed student may devote himself.

In the belief that learning with a purpose is almost always more rapid than learning in the abstract—more rewarding as well—the UWGB instructional program helps students relate values, purposes, and learning. UWGB believes that man's problems should be observed first-hand and experienced, not just studied through books or in the classroom, laboratory, or studio. Close interaction between the student and the community is provided through off-campus experiences for credit, which qualified students are encouraged to elect. Various volunteer off-campus opportunities also are available.

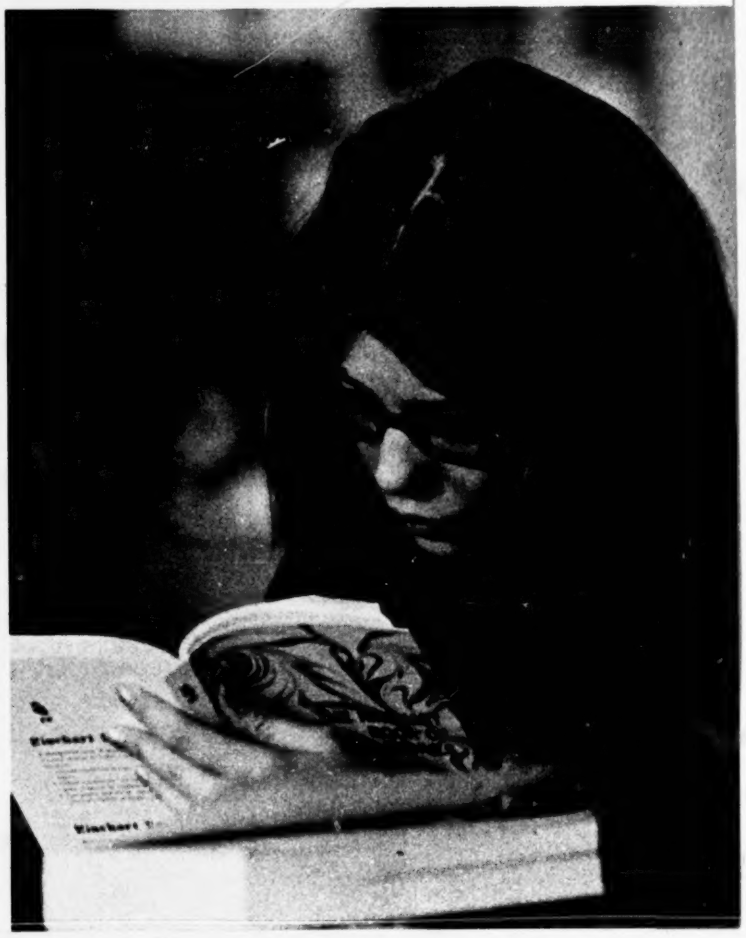
Through such means, students at UWGB become full participants in their education with great freedom to adapt their programs and patterns of study to their needs. Their unique educational experiences inside and outside the classroom enrich other students and the professors as well.

A FOCUS ON ECOLOGY

From this philosophy and these convictions has grown the special focus of the UWGB academic plan: a focus on ecology, or the study of man in relation to his surroundings. Such an approach to knowledge becomes urgent in the face of the increasing complexity of unsolved problems of the physical and social environment.

The situations comprising our environmental crises are headlined daily: problems of urbanization, racial crisis, population explosion, the cold —and hot—wars, crisis of transportation, effects of automation, crisis of environmental pollution, failing supplies of food and water, and the rapid depletion of fossil fuels.

These problems have been compounded by feedback from attempts to solve one or another of them unilaterally. For example, just when biological productivity must be enhanced, biocides threaten to disrupt the biosphere. Just when plans mature to modify weather processes, it is discovered that air pollution has already set in motion widespread inadvertent weather modification, the consequences of which can now be only dimly perceived.



Because these crises stem from man's relation to and use of his environment, from interactions among men, and from man's perception of his place in the biosphere, they are all aspects really of the ecological crisis. Solutions must be found through the effective cooperation of society's major agencies, including the university. The university, in fact, has leadership responsibility in this effort.

The UW Mission

By assuming its share of leadership, with its focus on ecology, The University of Wisconsin-Green Bay is being faithful to the traditional mission of The University of Wisconsin. This mission calls for the development of teaching, research, and community outreach activities. At UWGB these activities are closely interwoven, forging combined programs designed to help solve our ecological or environmental problems.

An ecological focus demands an interdisciplinary—indeed, a pan-disciplinary—focus. Artificial boundaries of disciplines restrict rather than enhance understanding of the several environments of man. The study of any type of environment intersects many disciplines and involves all branches of knowledge—the physical, biological, and behavioral sciences and the humanities. Ecology is a focus that is broadening and liberating in its educational thrust, not specializing or restrictive.

A focus on ecology demands close collaboration between a university and its region. UWGB is ideally situated in this regard. Many persons and agencies in Northeastern Wisconsin were involved in planning the institution and are continuing to participate in its development. Among other things, members of the community have helped select many of the ecological problems on which the university is concentrating.

The collaboration between UWGB and its region is comparative in spirit rather than narrowing or parochial. Comparisons between environmental problems of the Northern Great Lakes region and world ecological crises are an integral part of the educational plan.

THEME COLLEGE ORGANIZATION

Because ecological inquiry is pan-disciplinary, UWGB has organized its colleges within the framework of environmental themes rather than grouping them according to traditional disciplines. Two colleges select certain types of environment for attention. *The College of Environmental Sciences* emphasizes the problems of the natural environment. *The College of Community Sciences* focuses on the social environment. The remaining two colleges are concerned with the individual within his environments. *The College of Human Biology* centers its attention on human adaptability—that is, on the impingement of environment on the individual. *The College of Creative Communication* emphasizes the problem of human identity, or the individual's impingement on his environment.

Each college incorporates selected aspects of the liberal arts disciplines with certain applied or professional emphases. Each theme college has responsibility for a coordinated program of undergraduate and graduate studies, research, and community outreach programs related to its special environmental concern. Each college is responsible for developing its own course structure at all levels. Interdisciplinary courses are numerous, and interdisciplinary concentrations are required.

Plan for General Education

The UWGB student will find his undergraduate work a liberating experience. It is designed to liberate his spirit by development of his processes of thinking and by review and reinforcement of his values and sense of commitment.

At the core of the UWGB academic plan is a four-year series of liberal education seminars that begin with an introduction to values and environment, and culminate in the senior year in an all-university course that seeks to integrate knowledge from many fields.

During the intermediate two years, each theme college offers distinctive general or liberal education seminars grouped around some aspect of the environmental focus of the college. The purpose is to introduce the student to the knowledge of many disciplines as they relate to man's environment.

Individualization of learning is an important concept in the UWGB academic plan. All-University requirements are minimal, allowing the student great flexibility in designing his own program of study. In addition to the required four-year sequence of liberal education seminars, the student must satisfy two further requirements designed to (1) broaden his intellectual interests by providing him with a basic background in various environmental problems and disciplines and (2) make him familiar with different forms of communication and analysis.

To satisfy the first requirement—distribution—the student selects five or six hours of work in each of the theme colleges. Any course for which he is qualified may be selected, although certain courses are particularly appropriate. Courses in foreign language, data processing, mathematics, and studio experiences in the visual or performing arts meet the second requirement—tool subjects.

Either requirement can be satisfied by special examination that demonstrates the student's competence in the field. The student can take tool subjects that are not in his area of concentration on a pass-fail basis.

Plan for Specialization

As the student begins to specialize, his interest in a particular discipline is related to certain environmental problems. The reciprocal is also true: his interest in certain environmental problems is related to particular disciplines. Thus a student primarily interested in chemistry can relate it to problems of the natural environment (College of Environmental Sciences) or to problems of the environment's impingement on the individual (College of Human Biology). Similarily, a student interested in air or water or soil pollution could relate his concern to physics, chemistry, biology, geology, or the social sciences.

A number of professional applications have been grouped together in the UWGB School of Professional Studies. They include business and public administration, teacher education, leisure sciences, mass communications, and social services.

Students selecting professional applications are expected to relate them to one or more of the problems emphasized within the theme colleges. Here again the philosophy of the University is knowledge put to use—for example, not just knowledge of administration, but knowledge of administration related to specific social or environmental problems.

Bold Objectives

In sum, The University of Wisconsin-Green Bay is committed to an explicitly environmental approach to learning and knowledge. This applies not only to disciplines in the physical and biological sciences, where it is easy to comprehend and implement such an approach, but also to philosophy and literature, history and art—the so-called humanities. The environmental approach offers equally exciting opportunities in all areas of knowledge.

Through its coordinated program of teaching, research, and community outreach, UWGB is committed to the realization of a number of bold objectives: meaningful and effective contributions to society by its members; the physical, mental, and social well-being of individuals; community development; a natural environment that permanently enhances life.

As the Coordinating Council for Higher Education put it in approving the UWGB academic plan in 1968: This program "takes the best of traditional approaches and imaginatively combines them with the newest ways men have developed to seek a better world through education."

A MULTI-CAMPUS UNIVERSITY

The University of Wisconsin-Green Bay knows that its mission to serve the people of Northeastern Wisconsin requires close ties to communities throughout the region. Its main campus in Green Bay is one of four which directly serve students and the community at large.

Within a 60-mile radius of Green Bay are the Fox Valley Campus in Menasha, the Manitowoc County Campus in Manitowoc, and the Marinette County Campus in Marinette. At each of these campuses students can begin their education while living at home and members of the community can attend lectures, fine arts programs, sports events, and a variety of credit and non-credit workshops and classes.

Each campus is closely linked by past and present ties to The University of Wisconsin system. Each, including Green Bay through its building on Deckner Avenue, began as part of University Extension and joined the UW Center System when it was organized in 1964. County funds paid for buildings at each campus, which assures strong interest throughout the region in the development of UWGB.

The four former two-year Center System campuses began functioning July 1, 1968, as the multi-campus University of Wisconsin-Green Bay. The four campuses share a single faculty and central staff and are linked through social, recreational, and cultural activities. Library services and instructional media are available to all campuses through frequent delivery service. Closed circuit television and a computerized "learning bank" accessible by dial telephone from any study area are planned for the future.

As a unit of The University of Wisconsin system, UWGB has access to one of the largest university libraries in the country, as well as to other facilities and services available at the campuses throughout the system. In the UW tradition, it is a free and democratic university in which students have a responsible voice on advisory groups and faculty committees. It offers to students of all races and creeds an education designed to help each student realize his fullest potential. A financial aid program of jobs, scholarships, and loans attempts to place a UWGB education within the reach of all qualified students.

THE MAIN CAMPUS

The first buildings on the rolling, wooded, 600-acre main campus at the northeast edge of Green Bay opened in the fall of 1969. They include the three-story Environmental Sciences Building containing classrooms, lounge and reading areas, exhibit halls, and a lecture hall-auditorium seating 350; the four-story Laboratory Sciences Building containing classrooms and teaching laboratories, special purpose research facilities, faculty offices, and a snack bar; and the Instructional Resources Building housing the library, temporarily, and an instructional television studio, a data processing center, and faculty offices.

During 1969-70, construction began on the eight-story Library-Learning Center that will dominate the center of the campus, the Fine Arts Building for the visual arts and music, the Creative Communication Building for drama and faculty offices, and a heating plant. The first apartment style dormitories will be ready for occupancy in the fall of 1970.

The campus site includes the former Shorewood Country Club. The University has preserved nine holes of the golf course for public use and the former club house provides a student center. Large playing fields for students have been developed on other parts of the former golf course.

The beginning of University Circle Drive gives access to the first parking areas. As later phases of the building plan are completed, the drive will ring the campus. The interior of the campus, except for service roads, will remain free for pedestrian traffic, with a spacious, beautifully-landscaped and brick-paved plaza forming the focal point.

The Main Campus

Each section of the campus is being developed as an entity. Future development has been planned to avoid disruption of the use of existing buildings as construction continues.

Residence hall "villages" for both married and single students are being built on the periphery of the campus. Designed as living-learning centers where resident and commuter students can meet for study and relaxation, they will have commons buildings that provide food service, recreation areas, lounges, meeting rooms, offices for faculty and student counselors, study spaces, and small libraries.

For some time to come several small buildings that were on the site when it was purchased will continue to house administrative offices. Highest priority in construction will continue to be given to buildings that will meet the needs of the increasing student population.

Classroom, laboratory, and office space in the Deckner Avenue building—formerly the Green Bay two-year center—will continue to be used for a few years. The building is used primarily for the School of Professional Studies, University Extension, and, until 1972, for the performing arts. Its excellent gymnasium is used for various athletic activities. Regular bus transportation is provided for students and staff between the Deckner Avenue building and the new bay shore campus.

The Green Bay Community

The main campus of UWGB is now contributing to the growth of a vigorous community that has an historically interesting past. The campus itself is just a few miles from the spot where Jean Nicolet stepped from his birch bark canoe in 1634 to become the first white man in recorded history to set foot in what became Wisconsin—just 14 years after the Pilgrims landed at Plymouth Rock.

Nicolet's mission for the French government in Quebec was to pacify the Indians, expand the fur trade, and investigate a possible route to the Orient. He was soon followed by fur trappers and missionaries who settled at the mouth of the Fox River, making Green Bay the oldest city in Wisconsin.

As fur trading gave way to lumbering, the French settlers made room for new immigrants, many enticed to work in the developing paper mills by the offer of free transportation and two weeks' room and board. Germans, Belgians, Dutch, and Scandinavians came to work in the mills and to farm. The distinctive marks of early settlers and their descendents are still in evidence today.

Green Bay's strategic location dictated its early and continuing development as a trading center connecting the Fox-Wisconsin waterway with the Great Lakes and the world beyond. Railways, highways, and airlines have maintained and increased the importance of trade. The recent renewed interest in Great Lakes shipping brings vessels from around the world to the port of Green Bay.

The manufacture of paper products continues to be Green Bay's largest industry. Other important economic activities include cheese processing; the storage and processing of food; manufacture of such diverse items as clothing and sheet metal, mittens and auto parts, concrete products and mattresses, and office furniture and power shovels.

Green Bay is at the center of a varied recreational area. Lake Michigan and the Door Peninsula to the east and northeast, the Fox River valley to the south, the quiet wilderness streams and woods of North Central Wisconsin to the west and the waters of Green Bay at its doorstep attract visitors from many states. The city's 35 parks and playgrounds offer more than 630 acres of recreational space to residents as well as tourists.

A number of museums and buildings call attention to the history of the city and the nation and are open to the public in the summer months. These include Fort Howard, the Cotton house, the Baird law office, Tank cottage, East Moravian Church, and Hazelwood, all restored and furnished to show how the original residents lived, worshipped, and conducted their business. Also located in Green Bay is the National Railroad Museum, preserving the story of American railroading, and the Neville Public Museum.

Various civic organizations enhance the social, recreational, and cultural life of the community. Chief among these are the Green Bay Symphony Orchestra, Green Bay Community Theater, Civic Music Association, and, for sports fans, the Green Bay Packers football team and the Green Bay Bobcats hockey team. The city has three hospitals, excellent public and private counseling services, a growing public library system, churches representing every major denomination, one daily and four weekly newspapers, three television stations, three radio stations, and excellent YMCA and YWCA facilities. The area supports several business colleges and the Green Bay School of Vocational and Adult Education. St. Norbert College, a coeducational Catholic-sponsored, liberal arts college, is in nearby DePere.

In fulfilling its mission of community outreach, The University of Wisconsin-Green Bay is dedicated to building upon and supplementing, rather than duplicating or replacing, the agencies and organizations that already exist in the community.

FOX VALLEY CAMPUS

Located in Menasha, just 36 miles south of the main campus, the Fox Valley Campus serves the cities of the Fox River valley. It draws students from Neenah, Menasha, Appleton, Kimberly, and Kaukauna, as well as from smaller communities in the surrounding area. This area is the home of more than 100,000 people—and one of the fastest growing areas in the state.

Because of the make-up of the area—a series of interconnected but politically independent small cities—the Fox Valley community serves as a natural and on-the-spot laboratory for students doing research on urban problems.

The present campus building was completed in 1963. It contains excellent laboratories in the physical sciences, a planetarium, a library, and a Fine Arts Theatre seating 350. A cafeteria and lounge provide opportunity for faculty and students to meet informally in a relaxed atmosphere. Classrooms, offices, an art studio, and a lecture hall also fit into this well-arranged and efficient plant, all under one roof.

An outdoor seven-acre tract has been developed to accommodate an expanded athletic program. A soccer field, softball diamond, two tennis courts, an archery range, and a touch football field are available to students. An agreement with the Appleton YMCA permits classes in swimming, gymnastics, handball, and other indoor sports during winter months.

An active student government at the Fox Valley Campus has initiated many projects. "Intercom," for example, is a weekly informal discussion session between faculty or visiting lecturers and students. Parties, large and small, enhance student social life.

Fox Valley students interested in drama have formed their own acting company, Second City II. This group produces at least two plays during the academic year. The campus drama department produces three plays during the year and one during summer session, providing opportunities for those seeking experience and knowledge in all phases of theater work.

Fox Valley offers many opportunities for older persons to partake of academic life. Adults whose college entry has been delayed, or who have other responsibilities, are welcome to enroll in regular courses. In cooperation with University Extension, the campus offers seminars and institutes in fields ranging from humanities to business. Late afternoon and evening classes make it possible for housewives and persons with regular jobs to continue their education.

The paper industry dominates the Fox River valley. Paper plants and other commercial enterprises provide resources for course work at the campus. Students are able to find part- and full-time employment readily in local business and industry.

The Fox River valley has many cultural and recreational opportunities besides those at the campus itself. Lawrence University in Appleton offers a wide variety of public lecture and fine arts programs. Lawrence also is the home for the Worcester Art Center and the Institute of Paper Chemistry. Fox Valley students may use the excellent resources of the Samuel Appleton-Carnegie Library at Lawrence. The Bergstrom Art Center and Museum in Neenah has a succession of fine shows during the year. And the artists and craftsmen who make up the Appleton Gallery of Arts welcome students who share their interests.

The Attic Theatre at Lawrence and Riverside Players in Neenah offer summer theater for audience enjoyment and an opportunity for students to work on productions. The Fox Valley Symphony rehearses on the campus and faculty members hold positions on its board. Students who qualify may perform with the orchestra.

Many local parks, Lake Winnebago, and High Cliff State Park give the area recreational facilities throughout the year. There are two ski runs less than 30 minutes' drive away.

The Fox River valley, as it was in the days of early explorers, is a major north-south travel route. Two airlines, rail, and bus transportation make travel convenient, and U.S. Highway 41 is a rapid means of reaching Green Bay, Madison, and Milwaukee.

Three daily newspapers are published in the Fox cities, and many weeklies cover the surrounding communities. There are six radio stations in the area and the FM state station is received from the Chilton transmitter 20 miles away.

The Fox Valley Campus offers a convenient and stimulating beginning to university education. Basic college work here sets the student's feet firmly on the road to advanced studies at UWGB and to a rewarding future.

MANITOWOC COUNTY CAMPUS

The Manitowoc County Campus of The University of Wisconsin-Green Bay maintains an active "presence" in its marine environs. As an integral part of an academic institution much larger than itself, the campus-on-the-lake holds a unique position of cultural leadership in the port city of Manitowoc, 41 miles southeast of Green Bay.

Marine research into a variety of problems centering in the Great Lakes region provides the special focus of attention for the campus. From this convenient base students conduct research into environmental problems designed to improve marine life and related recreational and industrial activities.

Students and faculty combine their interests in initiating progressive city-campus programs. These include student teaching-aid projects in the public schools, YMCA activities, faculty publications, poetry "happenings," jazz concerts, "hatrack" story programs at the children's library, inter-faith encounters, and student-citizen panel discussions on topical issues. The city-campus also shares in the wide variety of entertainment provided by the UWGB Lecture and Fine Arts Committee.

In September 1933, 26 students, meeting at the Manitowoc Vocational School, enrolled in a single college course offered by the UW Extension Division. Two years later, the extension program, which now included five courses and 133 students, became known as the Extension Center. A circuit-riding faculty conducted the classes which continued to meet on the second floor of the vocational school. In 1962 the present building on the lake shore site, financed by Manitowoc County, was completed. Three years later, in March 1965, a destructive fire swept through the lounge and library areas in the new building. These facilities were soon restored and additional classrooms and office space added.

In a quiet setting, the broad lawns of the 40-acre campus site roll gently to the sandy beach of Lake Michigan which fronts the campus for more than 1,000 feet. The campus grounds adjoin Silver Creek Park, a recreational area comprising 78 wooded acres through which winds a sparkling creek that gives the park its name.

The campus is located at the south edge of Manitowoc, a progressive city with a population of 35,000. North of the campus along Lake Michigan, points of interest are the Manitowoc harbor and carferry slips, the Two Rivers Coast Guard Station, Point Beach State Park, nuclear power plants at Two Creeks and Kewaunee, and the Two Creeks sunken forest, one of five glacial forests in the United States.

The diversity of industry in Manitowoc County provides a principal source of strength for city and campus. Prominent among the products manufactured in the Manitowoc-Two Rivers area are aluminumware, ships, cranes, steel furniture, Christmas decorations, diesel engines, and bubble bath preparations.

In seasonal recreational activities, the Manitowoc area offers boating, sailing, swimming, fishing, golfing, riding, skating, skiing, tobogganing, as well as organized outdoor sports in picnic and play areas located in city and county parks.

A new activity—Coho salmon fishing—is soon to be added to the list. In 1969 about 200,000 Coho fingerlings, released from holding ponds in Manitowoc, Algoma, Kewaunee, and Sheboygan during the spring months, were planted in Lake Michigan. It is expected that about one fourth of this initial planting will come back to spawn as 16- to 18-pound adult Cohos in the fall of 1970.

Manitowoc has convenient access to other Wisconsin cities and neighboring states via State Highway 42 and U.S. Highways 10, 141, and 151. Transportation facilities are provided by the Chicago and Northwestern and Soo railroads and the Greyhound Bus Line. Two railroad carferries—the Ann Arbor and the Chesapeake and Ohio—schedule daily freight, passenger, and automobile service across Lake Michigan from Manitowoc to Frankfort and Ludington. North Central Airlines offers combined passenger and freight flights daily through the Class III Manitowoc Airport.

MARINETTE COUNTY CAMPUS

The Marinette County Campus is located 60 miles north and east around the curve of Green Bay from the UWGB central campus. Its 28-acre bayshore site provides a natural biological laboratory. Tall pines tower over the two buildings which at present form the educational and recreational compound.

The natural resources of the campus and the surrounding community provide a major area of interest for research activities. Students investigating the conservation of resources such as fossil fuels, minerals, and wildlife find the campus a convenient location from which to conduct their research.

The newest of the UWGB two-year campuses has been characterized by dramatic growth in enrollment and physical facilities since classes were first held on the site in 1965.

An arts center housing a 400-seat theater with a thrust stage and art and music studios is the latest addition to planned campus expansion, its construction following the development of theater arts, music, and graphic arts curricula. A unique feature is Theatre-On-The-Bay, a university-community regional theatrical enterprise which has been a focal point of academic and extracurricular activity during the eight-week summer session since 1966. Recently expanded, the program now functions year-round.

Construction of a library, gymnasium, and additional classroom space is in progress to complete a master plan to accommodate 500 students.

A high order of artistic and intellectual stimulation exists on the campus as faculty and students share its unique environmental advantages and social and cultural assets concurrently with the classroom educational experience.

About half the students live in the adjoining cities of Marinette and Menominee, which are separated by the Menominee River. The remainder come from communities beyond the two cities and from neighboring counties in Wisconsin and, through a reciprocal arrangement, from Michigan's Upper Peninsula. A small percentage represent other states throughout the nation. With the assistance of campus personnel, non-residents find housing in private homes.

Student life on the campus is closely affiliated with the surrounding community, which has adopted the university as its cultural center. Area business and industry provide additional fine arts opportunities, adult courses, student activities, and grants for research into local problems. Students are encouraged to involve themselves in pre-professional business and industrial exploration, and in community programs. They also provide the community with a part-time labor force. About 75 percent of the students work from 12 to 20 hours per week.

Location of the campus on the edge of thousands of acres of state-owned or leased public hunting and fishing grounds offers many opportunities for students of the natural sciences as well as for recreation seekers. Seventy-four percent of Marinette County is forested.

Total area population [illegible] more than 37,000, with the city of Marinette having 14,000 residents, and Menominee, 1[illegible],000. Manufacturing largely based on wood, paper, and chemical products is concentrated in the eastern part of the county where the campus is located. Two radio stations, two daily newspapers, and three weekly newspapers serve the area. Transportation facilities include airline service to midwest urban centers and daily railroad and bus schedules to and from Chicago. The Ann Arbor Railroad Car and Auto Ferry makes daily trips to and from neighboring Menominee and Frankfort, Michigan, during the summer months.

COMMUNITY INVOLVEMENT

From its beginning The University of Wisconsin-Green Bay has sought to involve members of its many communities in its development. A number of community consultants and advisory committees took part in the preparation of the University's academic plan, which emphasizes problems of the Northern Great Lakes region. Because citizens hold the key to the University's ability to accomplish its objectives, their active participation in the planning and carrying out of its many activities is encouraged and welcomed.

Currently, some 15 advisory committees, on which more than 200 citizens of Northeastern Wisconsin sit, are in existence. In addition, a number of citizens participate in the educational program as community lecturers, bringing their special interests and knowledge directly to students enrolled in the liberal education seminars at all four campuses.

The typical advisory committee meets two or three times a year with appropriate liaison members of the faculty, staff, and student body. Matters of current concern are discussed and reports are published as needed.

Community participation takes many forms. Some of the advisory committees are purely local in focus. For example, one committee concerns itself with planning and zoning around the Green Bay University site and another, with the development of a privately-financed ecumenical ministry at the Green Bay campus. Local advisory committees also assist in the development of the campuses at Fox Valley, Manitowoc, and Marinette.

Other committees focus on specific aspects of the UWGB academic plan. Each theme college has its own advisory committee and the School of Professional Studies has two, one for education and the other dealing with business and public administration.

Another group of committees concentrates on University-wide concerns. For example, the Citizens Community University Committee, more or less a steering group, advises on such matters as the university budget, the master building plan, and student discipline. The Telecommunications Advisory Committee is concerned with the linking of all four campuses and the improvement in the quality of teaching through telecommunications. The Lecture and Fine Arts Advisory Committee addresses itself to such matters as improvement in programming quality, the widening of audience participation, and the coordination of cultural activities throughout the community.

Joint participation of faculty, student, and community members characterizes such committees as the Green Bay Community-University Relations Committee, the Chancellor's Special Advisory Committee on a Performing Arts Theater, and the Athletic Board.

UWGB Development Councils have been established in the several campus communities to help obtain private support for University programs that cannot be funded from state appropriations.

A notable aspect of community participation is the active, creative, and moving consensus achieved between the community and the University.

The University springs from the community. As a community organization, it has a responsibility to report back to the community and be a part of it. Opening up many avenues of community participation permits a level and a dependability of communication not otherwise possible. The belief that the University's goals can most effectively be achieved through active community participation is basic to the UWGB philosophy.

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PARTNERSHIP WITH UNIVERSITY EXTENSION

The University knows that problems of the environment cannot be studied, nor can solutions to these problems be discovered, in isolation from the society in which the problems exist. To bring to bear most effectively its combined programs of teaching, research, and community outreach on problems of the environment, UWGB has formed a close partnership with the Extension Division of the University of Wisconsin. Through this partnership, UWGB and Extension faculties work together to identify problems, analyze opportunities, and design and conduct, through the Extension organization, educational and community service efforts. The partnership is directed by an assistant chancellor who holds a joint appointment with UWGB and University Extension and gives particular attention to UWGB-Extension activities in Northeastern Wisconsin.

These joint activities are concerned with the economic, social, and cultural development of the communities of the region and with the career advancement, general educational improvement and cultural enrichment of individuals throughout the region. Problems given high priority in the UWGB academic plan by community members who helped design it are given high priority in the planning for joint programs between UWGB and University Extension.

The entire University shares in the commitment to ameliorate crises of the environment. Each dean, for example, is responsible for determining how his college or school can aid communities in the analysis of environmental problems and opportunities. Each faculty member is encouraged to design means of adapting his teaching and research to the community outreach effort. Each student is challenged to make a commitment and contribution to society during his undergraduate training as well as later. The success of UWGB depends in large measure on how well these responsibilities and challenges are met. The partnership with the community and University Extension helps assure that they are met in an orderly and effective manner.

Part 1: The Academic Plan

AN INTEGRATED APPROACH TO KNOWLEDGE

The ecological focus of the University of Wisconsin–Green Bay provides an integrated approach to knowledge that pervades every facet of campus life. Not only are classroom activities and ideas made relevant for the student, but he also participates in a variety of activities outside the classroom, both on the campus and in the community, that are designed to make his total educational experience more meaningful.

UWGB has organized its colleges around environmental themes, rather than according to traditional disciplines. They are the College of Environmental Sciences, the College of Human Biology, the College of Community Sciences, and the College of Creative Communication. The names reflect the focus of each college and its particular area of teaching, research, and community outreach activity. The School of Professional Studies complements the theme colleges and is responsible for professional programs that relate to them.

Each student at UWGB selects a particular environmental theme to study in depth. Called concentrations, or majors, these areas of study cross disciplinary and college lines. The student also has the opportunity to study a second, more intensified, field when he selects an option along with a concentration. He is expected to relate work in the option—sociology, for example—to the broader area of the concentration—urban analysis, for example. The student who wishes to gain professional competence has a third choice available in a variety of professional collaterals and preprofessional programs leading to specialized or graduate work.

The first part of this chapter describes in some detail the colleges, concentrations, options, and professional applications and outlines the basic requirements of each. The second part of the chapter is devoted to programs designed to supplement, enrich, and extend the strictly academic life of the student.

ALL-UNIVERSITY REQUIREMENTS

An undergraduate education is a liberating experience. In the context of additional knowledge and experience, the liberating and maturing of students may take place as they develop their processes of thinking and review and reinforce their values and sense of commitment. To this end, The University of Wisconsin–Green Bay has established certain all-University requirements.

It should be noted, however, that firmly required courses are few in number and that even within the general requirements the student is afforded considerable flexibility. The student may take most required courses on a pass-fail basis. He may also be able to satisfy the requirements by special examination. Prerequisites which indicate the level of proficiency required to carry on a course are essentially advisory and will often be waived, allowing the student to register for the course by demonstrating his proficiency and obtaining the consent of the instructor. This procedure affords the student further flexibility in designing his own course of study.

All-University requirements fall into three major categories: liberal education seminars, distribution, and tool subjects.

Liberal Education Seminars

The core of liberal education at UWGB is a four-year series of Liberal Education Seminars, six credit hours each year, through which every student (a) as a freshman receives an introduction to values, ecology, and environment, (b) as a sophomore focuses on a particular set of environmental problems with an off-campus, Northern Great Lakes regional experience, (c) as a junior studies previously selected problems in an "other culture" context outside the region, and (d) as a senior integrates what he has learned and experienced with a broad exposure to several academic disciplines and explores problems of values, belief, personal commitment, and dedication.

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The **Freshman Seminars** provide an introduction to the two central concerns of the University: values and ecology. They emphasize the crises of belief and the forms of acting on beliefs within a series of ecological crises, providing an overview of man's several environments and selected contemporary ecological problems. Through team teaching and the mixing of students from all parts of the University, a broad experience is assured as the student receives an introduction to ecology as well as a survey of various environmental themes and value approaches.

Presentations both in large lecture formats and seminar-discussion sections will be used to assure that ample opportunities exist for students to articulate in oral and written form their reactions to materials presented. Written requirements in these seminars are substantial and evaluation of such written assignments will form the basis for a major portion of the course grade.

By the time a student is a sophomore, he has normally chosen the theme college in which he wishes to continue his education. Each theme college offers several sections of the **Sophomore Seminar and Off-Campus Experience** with each section focusing on a particular set of environmental problems.

Within his theme college, a student can select the section or set of problems of greatest interest to him. The first semester's work prepares him for an off-campus experience or special project, stressing the nature of American society and the Northern Great Lakes region and introducing the particular environmental problem on which the section is concentrating.

The second semester's work can be taken during the January Practica (special studies period), a regular semester, or during the summer. Time is spent in supervised off-campus observation or a special project, using the Northern Great Lakes region as a laboratory. Oral reports are made to the seminar, and different experiences of students in the seminar are compared and analyzed.

Some students will be able to take the second semester's work during the summer in connection with supervised summer employment or other special practica. Credit for the second semester's work in such a case may be greater. Many sophomores may prefer to carry out their project during the January Practica.

As a junior, a student studies an environmental problem in an other-culture context. The **Junior Liberal Education Seminar** varies widely from college to college and from student to student.

During the first semester of the junior seminar, the student studies an area in the United States outside the Northern Great Lakes region, some other Western country or area, and some non-Western country or area.

The second segment of the junior seminar can be completed during the January Practica (special studies period), a regular semester, or the summer. Opportunities are available both for supervised projects in another part of the United States and abroad. There will also be special University-based projects that relate environmental problems to other cultures. All projects require oral and written reports.

For students who participate in VISTA, the Peace Corps, or similar programs, credit may be granted equivalent to that for all or a part of the sophomore and junior seminars. A maximum of 12 credits may be allowed with no more than six credits for each year's experience.

The **Senior Seminar** gives the student an opportunity to integrate and assimilate the knowledge he has acquired through specialization in a theme college concentration and option and through acquaintance with local, national, and world communities. The first semester concentrates on the context of the student's specialization and the issues surrounding it; the second semester deals with values and personal commitment. A thesis based on the seminar experience is required.

Distribution

A truly educated man or woman has broad intellectual interests and some background, at least, in environmental problems and disciplines. At The University of Wisconsin–Green Bay, this breadth is encouraged in a number of ways. Each of the theme colleges is broadly interdisciplinary. The liberal education seminars bring together students and professors from all theme colleges in their consideration of man's ecological problems. And students in any theme college may freely elect courses offered by any college or school of the University for which they are qualified.

In order to encourage as much breadth as possible in undergraduate education, the University requires a student to select at least five or six hours of work in each of the theme colleges. Any course for which the student is qualified may be selected, although some of the colleges offer certain courses that are particularly appropriate for the spirit of this requirement. Alternatively, the student can demonstrate presence of such breadth and satisfy the distribution requirements through special examination.

Tool Subjects

To pursue knowledge effectively and to perform one's societal role adequately, the student must be familiar with different forms of communication and analysis. Tool subjects such as foreign language, data processing, mathematics, and studio experiences in the visual or performing arts meet this need.

To satisfy the tool subject requirement, the student must choose first, either a foreign language or a studio experience in the arts, and second, either data processing or mathematics (calculus).

A student can write off any or all of the tool subject requirements by taking a special examination that demonstrates his competence in the subject area or areas. The student also has the option of taking all tool subject courses on a pass-fail basis if they are not in the area of his major concentration. Programmed instruction in most tool subjects is available. The student wishing to explore this possibility should consult the Instructional Resources Center.

Mathematics (Calculus). A student electing to satisfy his tool subject requirement in this area may do so by demonstrating ability in mathematics through one year of college calculus. He may do so by means of a special examination or by enrolling in mathematics courses for credit, under a pass-fail grading system. A placement examination is given to each student choosing the calculus alternative. He may be exempt from all or part of the requirement, depending on his score.

Courses recommended for fulfilling the tool subject requirement in calculus are Mathematics 202, Calculus and Analytic Geometry I, and either Mathematics 203, Calculus and Analytic Geometry II, or Mathematics 204, Elementary Probability. Each one-semester course provides four credits.

Data Processing. A student who selects data processing to fulfill his tool subject requirement may meet it through special examination or by satisfactorily completing two three-credit courses in elementary data processing and computer science. It is recommended that all students take Mathematics 250, Computer Science I, the first semester. This lecture and laboratory course draws on examples that are appropriate to the needs of students in each of the theme colleges, with each student selecting work related to his theme concentration.

During the second semester the student will be able to select one of the following three-credit courses to complete the data processing requirement: Mathematics 251, Computer Science II; Mathematics 252, Machine Organization; Mathematics 260, Elementary Statistics; Mathematics 353, Advanced Programming; or Community Sciences 205, Social Science Statistics.

Foreign Language. A student who selects this tool subject requirement must demonstrate competence in a foreign language through the second year at the college level. Normally a year's course in high school is equivalent to one semester of college work. Language competence is determined by a placement examination; the student who demonstrates competence through the 203 level of the college sequence in the language of his choice will be exempt from further language work.

Students take the 102-103 sequence in languages normally offered at UWGB on an automatic pass-fail basis, except by petition.

The language selected is a matter of student choice, in consultation with his adviser. The choice should be related to his intellectual interests, his plans for an other-culture experience as a junior, and his travel plans as an older adult. It need not be one of the languages regularly taught at the University (such as French, Spanish, or German). A student who wishes to strengthen his competence in a language not regularly taught will be assisted by language instructors and by the Instructional Resources Center. Often special summer programs are available at one or more universities to meet such needs. A foreign student may meet the language requirement by certification of competency in English, if it is not his native language.

Visual and Performing Arts. Not only do the visual and performing arts involve an effort at meaningful aesthetic communication; they are also useful in the pursuit of many different occupations. The student who decides to fulfill his tool subject requirement with studio experience in the visual and performing arts will find that the skills and capacities he has gained can add a meaningful dimension to his participation in community endeavors.

Competence in studio courses can be satisfied in four ways. In regard to the visual arts, the student is required to demonstrate competence equivalent to six hours of studio work at the 200 level. Courses recommended are Visual Arts 201, Introduction to Painting; Visual Arts 202, Introduction to Ceramics; or Visual Arts 203, Introduction to Sculpture.

The student who selects music as his studio experience will be required to demonstrate ability equivalent to six credit hours beyond the first year level of applied music (courses numbered 101 to 140). This ability or the six credit hours can be in solo or individual performance areas or in group participation in ensembles or organizations such as band, orchestra, and choral groups. The student must audition before the applied music committee for placement in any of these areas and must demonstrate ability through the first year level of applied music (courses numbered 101 to 140) before he is considered qualified for solo, ensemble, or organization participation.

The level of competence required in drama is that achieved through six credits of work at the 200 course level (for example, six credits of work at the level of Performing Arts: Drama 232, Theater Techniques). Completion of two semesters (six credits) of studio courses in one or any combination of the following areas meets the requirement: acting, intercurricular theater, play writing, stage direction, and theater techniques. It should be noted that the content of the courses in intercurricular theater and in theater techniques varies from semester to semester and is not always suitable for meeting tool subject requirements. The student should check with the instructor to determine whether or not the particular course will satisfy these requirements before he registers for it.

In dance, the level of competence is that at course 404, Dance Performance; there is no prerequisite if the student takes the dance course on a pass-fail tool subject basis.

MAJORS AND MINORS: THREE TYPES OF CHOICES

In addition to meeting the all-University requirements of the Liberal Education Seminars, distribution courses, and tool subjects, a student must meet the requirements of his college or school for majors. By the time a student is a first-term sophomore, he should normally have selected the theme college or school in which he proposes to major.

Choice 1—An Environmental Problem Major: The Concentration

A student must select an environmental problem (or concentration) on which to focus. A concentration requires 30 credits at the junior-senior level reflecting an interdisciplinary focus on an environmental problem.

Choice 2—A Discipline or Field of Knowledge Major: The Option

A student may, in addition to his concentration, select an option. The term option refers to a discipline or field of knowledge such as art, political science, biology, or business and public administration. A student selecting a concentration-option combination will normally be required to take about 36 credits at the 300 and 400 levels, approximately 24 of which relate the option to the concentration (e.g. relate chemistry to environmental control with emphasis on water pollution, relate sociology to urban analysis, etc.).

Choice 3—Professional Application

A student may choose to emphasize professional application of his concentration or option. He may do so in one of two ways: a collateral or a preprofessional program.

Collaterals

Each of the concentrations and options has direct professional applications (i.e. job relevance to a professional school experience). However, there are several special applications of the concentrations and options that require some additional particular competence. To meet this need, a student may select a professional collateral or minor in the School of Professional Studies which supplements his major and provides him with a professional-specialist orientation.

Professional collateral courses are offered in education (leading to teacher certification at the early childhood, or preschool; elementary; and secondary levels), business administration, public administration, mass communications, leisure sciences, and social services. In most cases 18 hours are required for a professional collateral.

Preprofessional Programs

Three kinds of preprofessional opportunities are present. First, UWGB's regular majors leading to a bachelor's degree offer appropriate preparation for most graduate professional schools such as law, medicine, dentistry, social work, music, and others.

Second, for students desiring a four-year bachelor's degree in engineering, nursing, or certain other applied fields, UWGB offers a special two-year preprofessional program.

Third, a student desiring both a liberal and a technical bachelor's degree can select a 3-2 plan leading to both a bachelor of arts (or science) degree at UWGB and a bachelor of nursing or engineering (or another applied field) at another institution. Three years are spent at UWGB, two at the other institution.

Theme College Organization

THE COLLEGE OF ENVIRONMENTAL SCIENCES

The College of Environmental Sciences offers programs designed to develop the concept of ecosystems and to provide an understanding of the exchange of materials and energy between living organisms and their physical and chemical environment, the use and management of natural resources, and alterations of ecosystems due to air, water, and soil pollution. These programs seek to prepare students to participate in solving the problems of environmental quality and in managing natural resources.

The student takes a core of courses designed to provide a basic knowledge in science which is essential for his comprehension of today's world. Concurrent with or following the sequence of core courses, the student, depending on his interests, majors in one of two environmental science concentrations:

1. Environmental control
2. Ecosystem analysis

A student having selected one of the above concentrations, may, but is not required to, select an option in any college or school. The option consists of a course sequence in a discipline in which the student explores in some depth a particular facet of an environmental problem. This is the "concentration-option."

The options in the College of Environmental Sciences include chemistry, mathematics, physics, and earth sciences. A student may select options such as economics, anthropology, political science, or biology from disciplines housed in other colleges with the approval of the respective deans.

A major in the College of Environmental Sciences may choose a professional collateral. As appropriate, the student may combine a concentration with any of the following professional collaterals: business or public administration, education (elementary or secondary), leisure sciences, mass communications, or social services. The student selecting a combined program of this type is encouraged to adapt his off-campus sophomore and junior experiences to make them relevant to both the concentration and collateral.

Students majoring in the College of Environmental Sciences must meet the all-University requirements including the four-year liberal education seminars, distribution credits, and tool subjects. In addition, the College of Environmental Sciences requires the following basic science courses:

Chemistry-Physics 110, 211 and 212, Chemistry-Physics, 5 cr. each (three semesters)*
Environmental Sciences 102, Introduction to Environmental Sciences, 3 cr.
Biology 202, Biology of Cells, 4 cr.
Biology 203, Biology of Organisms, 4 cr.
Earth Science 202, The Earth's Physical Environment, 4 cr.
Human Biology 102, Introduction to Human Adaptability, 3 cr.
Mathematics 202, Calculus and Analytic Geometry I, 4 cr.

A student desiring to major in CES and take a professional minor or collateral (such as business administration or secondary education) is advised to combine a concentration with a collateral rather than a concentration-option with a collateral. A concentration requires six hours less of junior-senior work for the major. In addition, if the student takes advantage of combining the junior LES practicum with field work, internship, or practice teaching in the collateral, he should have ample opportunity to meet all requirements within the 124 credits required for graduation.

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*Students who petition to substitute Chemistry-Physics 111 and 112 for 211 and 212 should be aware that the calculus based track is required for several courses and options in the College of Environmental Sciences. Often the 211 and 212 track is the only level that may be recognized for entry by transfer into engineering, etc. Only the complete three semester sequence will be accepted on transfer as equivalent to one year of chemistry and/or one year of physics.

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A student interested in science education may petition to substitute computer science for calculus. He may also combine a concentration in the College of Community Sciences or the College of Creative Communication with a science option in addition to the education collateral.

SUMMARY OF A SAMPLE PROGRAM

(The following represents a typical program only. Courses normally do not have to be taken in the sequences indicated.)

Freshman Year	*Credits*
Liberal Education Seminar 101-102 Crises of Belief and Ecology	6
Distribution:	
Course from CCC (preferably 102)	3
Course from CCS (preferably 102)	3
Human Biology 102 Introduction to Human Adaptability	3
Tool subjects:	
Mathematics 202 Calculus and Analytic Geometry I	4
Mathematics 203 Calculus and Analytic Geometry II **or** Mathematics 204 Elementary Probability	4
Environmental Sciences 102 Introduction to Environmental Sciences	3
Chemistry-Physics 110 Chemistry-Physics	5
	31

Sophomore Year	
Liberal Education Seminar 215-216 Seminar and Practicum in Environmental Sciences	6
Distribution:	
CCC or CCS course	3
Biology 202 Biology of Cells	4
Biology 203 Biology of Organisms	4
Earth Science 202 The Earth's Physical Environment	4
Chemistry-Physics 211-212 Chemistry-Physics	10
	31

Junior Year	
Liberal Education Seminar 315-316 Seminar and Practicum in Environmental Sciences	6*
Major subjects:	
Concentration or Concentration-Option	15
Tool subjects:	
Studio experience or foreign language	6
Distribution:	
CCC or CCS course	3
	30

Senior Year	
Liberal Education Seminar 401-402 Senior Seminar	6
Major subjects:	
Concentration or Concentration-Option	Up to 15**
Electives or professional collateral courses	At least 11
	32

*Is considered as part of a student's concentration. Those students selecting a professional collateral may relate the practicum portion of this course to it also, thus reducing certain credit requirements, provided that the work in the professional collateral (field work, internship, practice teaching, etc.) may properly be identified as other culture experience.

**Only nine credits (or a total of 30 at junior-senior level) required to those majoring in a concentration.

THE COLLEGE OF HUMAN BIOLOGY

The focus of the educational program of this college is human adaptability. The health of individuals and of populations is expressed as ability to adjust and adapt to many stresses—physical, chemical, biological, and mental (perceptive and conceptual)—within the environment. Human adaptability arises from the genetic variability of the human species and from the interaction of environment and the individual. The basic components of human adaptability are collections of morphological, biochemical, physiological, and behavioral traits and mechanisms. Human adaptability exhibits ontogeny, for it passes through stages of immaturity, maturity, and decay. Both the stages of adaptability and the groups of adaptive traits are individually distinctive, presumably determined in part by inheritance and in part by unique environmental experience.

Within this context, the College of Human Biology conducts programs for educating human biologists, that is, persons educated in the biological and related sciences but who are particularly versed in the biology of man, including his physical and mental development. Individuals with this competence are increasingly in demand in the health sciences (e.g. medicine, nursing, public health, health education) and in the behavioral sciences.

There is an urgent need to educate persons capable of investigating man within the framework of his total environment so that the impact of that complex and diverse environment upon his health and well-being may be better understood. Because so much of this total environment is man-made and because man is most dependent upon the culture within which he develops, the educational programs of this college are conducted in close collaboration with those of the other colleges of UWGB, particularly the College of Community Sciences, in which are located several of the academic disciplines associated with the behavioral sciences.

Within the limitations set by University and college requirements, the program of each student will be individually designed. Among the alternatives for concentration are:

1. Human development
2. Human adaptability
3. Human performance*
4. Nutritional sciences*
5. Population dynamics

*This program will be offered when it has been approved by the Coordinating Council for Higher Education.

Within each of these broad areas, a disciplinary option may be elected in biology (biochemistry, botany, entomology, microbiology, physiology and/or zoology). In disciplines housed outside the college, options in earth science or psychology are available. The student in the College of Human Biology may select other options from disciplines housed in other colleges with approval of the two respective deans. Opportunity to pursue professional collaterals in such fields as business and public administration, education (leading to teacher certification), leisure sciences, mass communications, and social services is available.

Students enrolled in the College of Human Biology must meet the all-University requirements including the four-year liberal education seminar, distribution credits and tool subjects.

The College of Human Biology requires the following basic science courses, except for those students who elect to specialize in mental growth and development within the concentration on human development:

Chemistry-Physics 110, 111, and 112 or 110, 211, and 212, Chemistry-Physics, 5 cr. each (three semesters)*
Human Biology 102, Introduction to Human Adaptability, 3 cr.
Environmental Sciences 102, Introduction to Environmental Sciences, 3 cr.
Biology 202, Biology of Cells, 4 cr.
Biology 203, Biology of Organisms, 4 cr.
Mathematics 202, Calculus and Analytic Geometry I, 4 cr.

In the third and fourth years the student concentrates in one of the areas of human development, human adaptability, human performance,** nutritional science,** or population dynamics.

A student desiring to major in CHB and take a professional minor or collateral (such as business administration or secondary education) is advised to combine a concentration with a collateral rather than a concentration-option with a collateral. A concentration requires six hours less of junior-senior work for the major. In addition, if the student takes advantage of combining the junior LES practicum with field work, internship, or practice teaching in the collateral, he should have ample opportunity to meet all requirements within the 124 credits required for graduation.

A student interested in science education may petition to substitute computer science for calculus. He may also combine a concentration in the College of Community Sciences or the College of Creative Communication with a science option in addition to the education collateral.

*Chemistry-Physics 211 and 212 are recommended for students pursuing concentrations and options in the College of Human Biology, particularly those preparing for graduate studies, and are required for those electing options in chemistry, mathematics, and physics. These courses are not required for students specializing in mental growth and development within the concentration in human development.

**Will be offered when approved by the Coordinating Council for Higher Education.

SUMMARY OF A SAMPLE PROGRAM

(The following represents a typical program only. Courses normally do not have to be taken in the sequences indicated.)

Freshman Year	*Credits*
Liberal Education Seminar 101-102 Crises of Belief and Ecology	6
Distribution:	
Course from CCC (preferably 102)	3
Course from CCS (preferably 102)	3
Environmental Sciences 102 Introduction to Environmental Sciences	3
Chemistry-Physics 110 Chemistry-Physics	5
Human Biology 102 Introduction to Human Adaptability	3
Tool subjects:	
Mathematics 202 Calculus and Analytic Geometry I	4
Mathematics 203 Calculus and Analytic Geometry II **or** Mathematics 204 Elementary Probability	4
	31
Sophomore Year	
Liberal Education Seminar 217-218 Seminar and Practicum in Human Biology	6
Distribution:	
CCC and CCS courses	6
Biology 202 Biology of Cells	4
Biology 203 Biology of Organisms	4
Chemistry-Physics 211-212 Chemistry-Physics	10
	30
Junior Year	
Liberal Education Seminar 317-318 Seminar and Practicum in Human Biology	6*
Major subjects:	
Concentration or Concentration-Option	15
Tool subjects:	
Studio experience or foreign language	6
Electives or professional collateral courses	4
	31
Senior Year	
Liberal Education Seminar 401-402 Senior Seminar	6
Major subjects:	
Concentration or Concentration-Option	Up to 15**
Electives or professional collateral courses	At least 11
	32

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*Is considered as part of a student's concentration. Those students selecting a professional collateral may relate the practicum portion of this course to it also, thus reducing certain credit requirements, provided that the work in the professional collateral (field work, internship, practice teaching, etc.) may properly be identified as other culture experience.

**Only nine credits (or a total of 30 at junior-senior level) required for those majoring in a concentration.

THE COLLEGE OF COMMUNITY SCIENCES

The College of Community Sciences offers programs focusing upon the role of man in the social environment and the process by which man modifies his social environment. The college accents those areas of understanding and perception that serve to prepare contemporary students for effective participation in their community at the local, state, national, and international levels.

Programs emphasize the comparative aspects of the community sciences, relating the modes of analysis characteristic of the community sciences to the Northern Great Lakes region and to other parts of the nation and the world.

Critical exposure to the approach of the community sciences is as necessary for those involved in the environmental sciences, human biology, and creative communication, as it is for persons who choose concentrations within this college. Similarly, it is vital that students meeting the requirements of one of the concentrations offered in this college come to some basic understanding of the major themes expressed in the programs of the other colleges.

The student takes a basic core of courses essential for a comprehension of man's role in the social environment and his modifications of that social environment. The student then pursues a major in one of three community sciences concentrations. The concentrations are:

1. Regional analysis
2. Urban analysis
3. Modernization processes

Upon indicating his intent to enter a concentration, a student is assigned to an appropriate faculty member within the college. He normally enters the College of Community Sciences at the beginning of the sophomore year and selects the concentration in the junior year.

The student concentrating in regional analysis, urban analysis, or modernization processes normally will complete 30 credits in the 300- and 400-level courses directly related to the concentration. The student selecting a concentration-option combination normally will complete 36 credits at the 300 and 400 levels, 24 of which relate the option (e.g. sociology) to the concentration (e.g. regional analysis). Options housed within the College of Community Sciences are anthropology, economics, geography, political science, psychology, and sociology. Specific courses are described in Chapter 4. An adviser can assist the student with the selection of courses for the concentration or the concentration-option.

The student in the College of Community Sciences may choose to augment his concentration with a disciplinary option. For example, it is possible for a student to take his concentration in regional analysis with either an anthropology, economics, geography, political science, psychology or sociology option. The same options can be applied in the case of urban analysis or modernization processes. A student may select an option from disciplines housed in other colleges with approval of the two respective deans.

Further, the student may choose to pursue any one of the professional collaterals offered by the University. Such programs are usually initiated at the beginning of the third year. As appropriate, the student may combine a concentration or a concentration-option with one of the following collaterals: business or public administration, education (pre-school, elementary, and secondary), leisure sciences, mass communications, or social services. The student selecting a combined program of this type is encouraged to adapt his off-campus sophomore and junior experiences so as to be relevant to both the concentration and the collateral.

Students majoring in the College of Community Sciences must meet all-University requirements including the four-year liberal education seminars, distribution credits and tool subjects.

The College of Community Sciences shares with the other colleges in the University a concern that graduates of UWGB gain those skills necessary for effective functioning in the contemporary world. The college recognizes that many students will be able to attain one or more of the required levels of tool subject capacity before entering the University. Therefore, any student who is able to write off any requirement is urged to consider the great advantages of attaining necessary capacity in those other areas where he does not have advanced preparation.

In meeting University distribution requirements, the student should recognize that these course experiences can be directly related to work in his concentration and disciplinary option. Members of the faculty are available to assist students in developing programs for themselves that take advantage of such relationships.

The following courses are required of all students majoring in the College of Community Sciences:

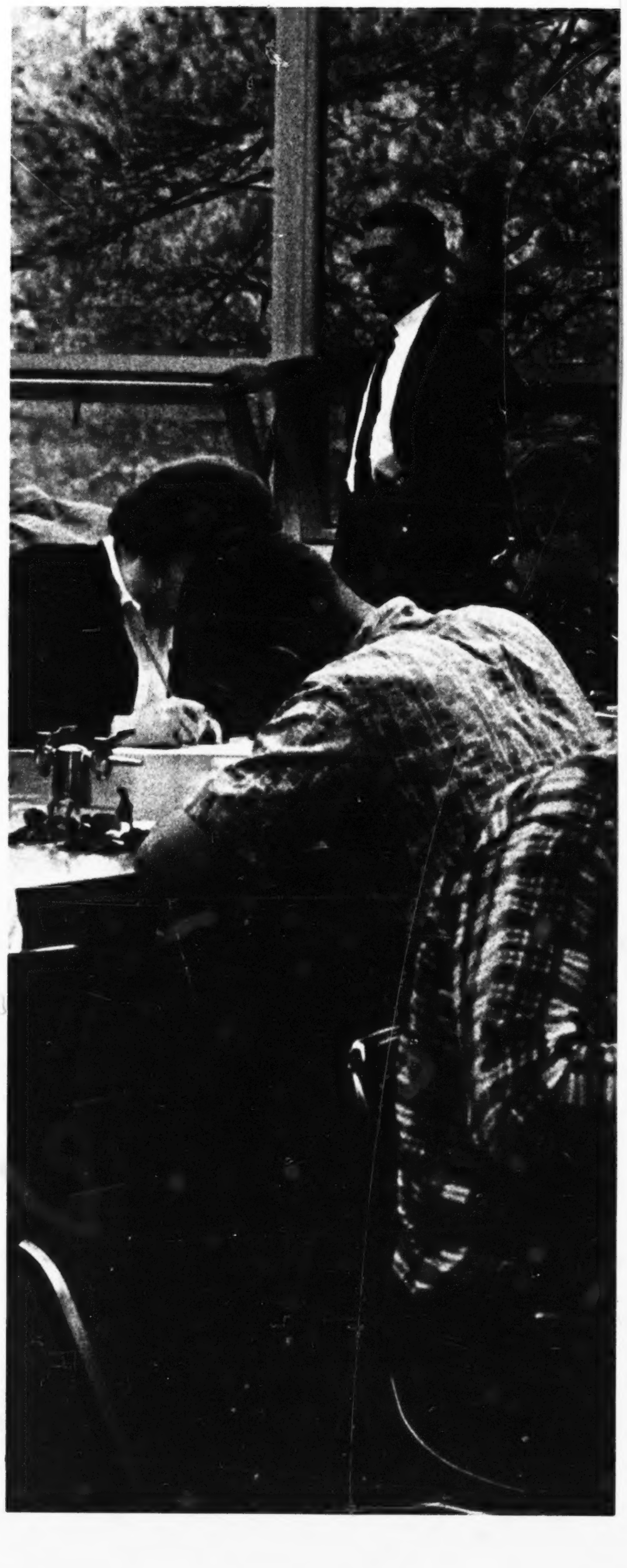
Courses and Credits
Community Sciences 205, Social Science Statistics, 3 cr.
Philosophy III, Descriptive Logic, 3 cr.
Community Sciences 102, Man and His Social Environment, 3 cr.

and one of the following*

Anthropology 102, Environmental Anthropology, 3 cr.
Economics 102, Economics and the Modern World, 3 cr.
Geography 102, Approaches to Geography, 3 cr.
Political Science 103, Introduction to Political Analysis, 3 cr.
Psychology 102, The Behavior and Experiences of Man, 3 cr.
Sociology 102, The City, 3 cr.

It is strongly suggested that students of other colleges seeking to meet distribution requirements, or wishing to understand the approach to community sciences characteristic of the College of Community Sciences, also begin their course work in this theme college by taking Community Sciences 102.

*Community Sciences 102 is a prerequisite for all these courses.



SUMMARY OF A SAMPLE PROGRAM

(The following represents a typical program only. Courses normally do not have to be taken in the sequences indicated.)

Freshman Year	*Credits*
Liberal Education Seminar 101-102 Crises of Belief and Ecology	6
Distribution:	
Courses from CCC, CES, and CHB (preferably 102 in each case)	9
Other CCC, CES, or CHB course	3
Community Sciences 102 Man and His Social Environment	3
Required basic course in one of behavioral sciences	3
Tool subjects	6
	30

Sophomore Year	
Liberal Education Seminar 213-214 Seminar and Practicum in Community Sciences	6*
Distribution:	
CCC, CES, or CHB courses	6
Tool subjects	6
Community Sciences 202 Introduction to Regional Analysis **or** Community Sciences 203 Introduction to Urban Analysis **or** Community Sciences 204 Introduction to Modernization Processes	3
Community Sciences 205 Social Science Statistics	3
Philosophy 111 Descriptive Logic	3
Electives	5
	32

Junior Year	
Liberal Education Seminar 313-314 Seminar and Practicum in Community Sciences	6**
Major subjects:	
Concentration or Concentration-Option	15
Electives or professional collateral courses	10
	31

Senior Year	
Liberal Education Seminar 401-402 Senior Seminar	6
Major subjects:	
Concentration or Concentration-Option	Up to 15***
Electives or professional collateral courses	At least 10
	31

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*Sample program is based on the assumption that the practicum portion (3 cr.) can be taken during January.

**Is considered as part of a student's concentration. Those students selecting a professional collateral may relate the practicum portion of this course to it also, thus reducing certain credit requirements, provided that the work in the professional collateral (field work, internship, practice teaching, etc.) may properly be identified as other culture experience.

***Only nine credits (or a total of 30 at junior-senior level) required for those majoring in a concentration.

THE COLLEGE OF CREATIVE COMMUNICATION

However much we rely on science and technology in the shaping of tomorrow's world, the realm of human values, significance and meaning will always remain the prerogative of man. Whether this paragon is called artist, musician, writer, philosopher, or mathematician, words like space, light, form, meaning, and beauty will be as essential to his vocabulary as the critical paths, analyses, calculations, and statistics of human engineering.

The educational philosophy of UWGB is an ecological one. Inherent in such an approach is the impingement and the relevance of any one field of learning on any number of other fields. The walls between disciplines are, in fact, artificial—as far as teaching and learning are concerned, there is no necessity for them. The curriculum, then, reflects that interdisciplinary philosophy.

The College of Creative Communication is dedicated to the reintegration of our contemporary scientific, technological, social, and artistic environment. This is one of the great contemporary challenges. A key task of our time is the education of the senses—the development of our neglected, atrophic sensibilities. We need to integrate the knowledge we have about the processes of perception and feelings, the didactic devices to develop them, and the concrete areas where creative vision and feeling can be put to service.

The formlessness of much of our present life has several obvious aspects. First, our environmental chaos which accounts for inadequate living conditions, waste of human and material resources, and pollution of air, water, and earth. Second, our social chaos—lack of common ideas, common feelings, common purposes. Third, our inner chaos—individual inability to live in harmony with oneself, inability to accept one's whole self and let body, feelings, and thought dwell together in harmony. We have then, three basic tasks before us: We must build bridges between man and nature. We must build bridges between man and man. We have to build bridges inside ourselves. The central focus in this college is on human identity and the cultural environment.

A student choosing to major within the College of Creative Communication chooses one of two concentrations, both of which place emphasis on an individual's relation and contribution to the cultural environment:

1. Analysis-Synthesis
2. Communication-Action

In addition, a student may choose one of the following disciplinary options: communication arts and sciences, history, literature and language (with several area alternatives), performing arts (dance, drama, music), philosophy, visual arts, or options administered by any other college. A concentration requires 30 credits at the 300 and 400 level; a concentration-option requires 36, of which 24 relate the discipline to the concentration.

The various disciplinary options within CCC present substantial potential to center on visual, verbal, mathematical, and musical formulations of our awareness, creativity, and expression and their interplay with environment. Neither the concentrations nor the options need be mutually exclusive. For example, a student interested in set design might combine literature, visual arts, and drama and produce a set for a play by Shakespeare. Variable combination-options are possible under either of the two concentrations.

A student may select one of the professional collaterals: business or public administration, education (teacher certification at the elementary or secondary levels), leisure sciences, mass communications, and social services.

Students majoring in CCC must meet the all-University requirements including the four-year liberal education seminars, distribution credits, and tool subjects.

All majors in this college are required to take the one-semester course, Creative Communication 102, Gateway to Human Identities, and either six credits at the 300 level in a foreign literature-language or Creative Communication 371-372, Introduction to the Man-Made Environment.

SUMMARY OF A SAMPLE PROGRAM

(The following represents a typical program only. Courses normally do not have to be taken in the sequences indicated.)

Freshman Year	*Credits*
Liberal Education Seminar 101-102	
Crises of Belief and Ecology	6
Distribution:	
Courses from CCS, CES, and CHB	
(preferably 102 in each case)	9
Creative Communication 102	
Gateway to Human Identities	3
Electives	6
Tool subjects	6
	30

Sophomore Year	
Liberal Education Seminar 211-212	
Seminar and Practicum in	
Creative Communication	6*
Distribution:	
CCS, CES, or CHB courses	9
Tool subjects	6
Creative Communication 204	
Introduction to Creativity **or**	
Creative Communication 205	
Principles of Expression	3
Electives	8
	32

Junior Year	
Liberal Education Seminar 311-312	
Seminar and Practicum in	
Creative Communication	6**
Major subjects:	
Creative Communication 371-372	
Introduction to the Man-Made	
Environment **or**	
300-level foreign literature-language	6***
Concentration or	
Concentration-Option	15
Electives or professional collateral	
courses	10
	31

Senior Year	
Liberal Education Seminar 401-402	
Senior Seminar	6
Major subjects:	
Concentration or	
Concentration-Option	Up to 15****
Electives or professional collateral	
courses	At least 10
	31

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*Sample program is based on the assumption that the practicum portion (3 cr.) can be taken during January.

**Is considered as part of a student's concentration. Those students selecting a professional collateral may relate the practicum portion of this course to it also, thus reducing certain credit requirements, provided that the work in the professional collateral (field work, internship, practice teaching, etc.) may properly be identified as other culture experience.

***Is considered part of the student's concentration.

****Only nine credits (or a total of 30 at junior-senior level) required for those majoring in a concentration.

SCHOOL OF PROFESSIONAL STUDIES

The School of Professional Studies offers collateral programs which are both professional and preprofessional in nature, supplementing the concentrations in the theme colleges.

The professional programs are the majors in business and public administration, both of which follow the academic plan in being environmentally oriented.

Teacher certification is available through the professional collateral in education. The combination of this collateral with the appropriate concentration or concentration-option provides a program the successful completion of which results in certification to teach at the elementary or secondary level in the public schools of Wisconsin, and, on a reciprocal basis, in some 40 other states.

Several preprofessional programs are offered through the professional collaterals in mass communications, leisure sciences, and social services. In a sense they are analogous to minors, supplementing concentrations or concentration-options, and preparing the student either for graduate professional training or for entry into the appropriate professions on a subprofessional level. Other preprofessional programs are described in the section on Preprofessional Programs, later in this chapter.

A SPECIAL NOTE FOR ENTERING FRESHMEN

Some entering freshmen are certain about the subject in which they want to major. UWGB encourages these students to follow the sample programs set forth by each college for majors.

Many other students do not know in what field they want to major or are somewhat uncertain. UWGB strongly encourages these students to take a flexible set of courses for the first semester. This set of courses surveys the principal fields of knowledge and environmental problems. Because it provides such a broad overview, it will assist the student in selecting a major. It meets half the distribution requirements. The UWGB curriculum is so arranged that regardless of his ultimate major, a student will be taking needed courses by following these suggestions as a first semester freshman. He makes full progress toward graduation.

The courses recommended for the first semester freshman who is at all uncertain of his ultimate major are:

Courses and Credits

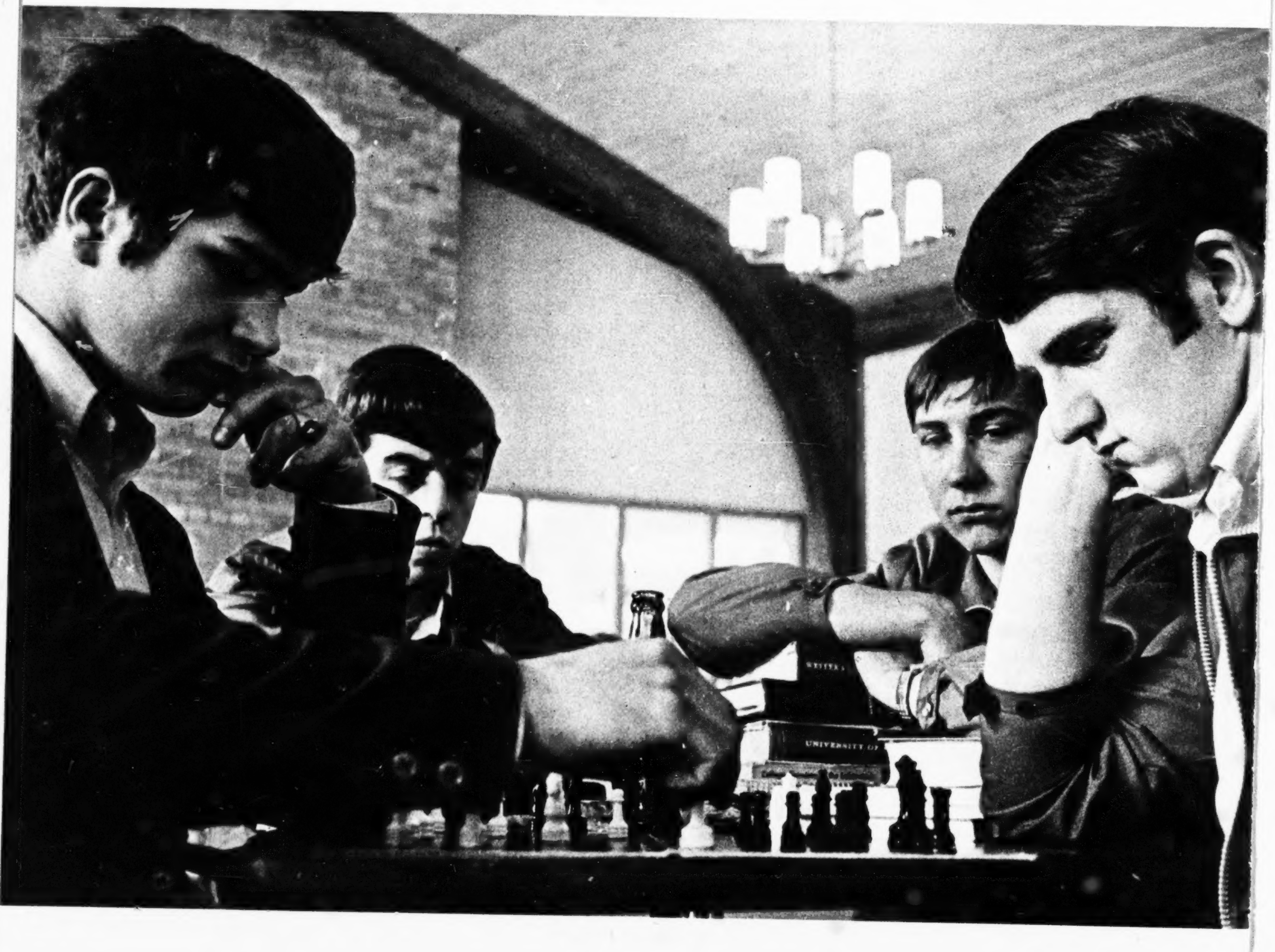
Liberal Education Seminar 101, Crises of Belief and Ecology, 3 cr.
Human Biology 102, Introduction to Human Adaptability, 3 cr.
Environmental Sciences 102, Introduction to Environmental Sciences, 3 cr.
Creative Communication 102, Gateway to Human Identities, 3 cr.
Community Sciences 102, Man and His Social Environment, 3 cr.

As an alternative for one or more of these courses, an entering freshman may desire to begin meeting one or both of his tool subject requirements: a foreign language or studio experience, and calculus (normally required of majors in CES and CHB) or data processing.

Students desiring to pursue majors in the College of Environmental Sciences or the College of Human Biology (except for Human Development) and/or students desiring an elementary teaching certificate should make a determination of their objective before registering for the second semester of the freshman year. Otherwise, they run the risk of having to take extra credits in order to meet graduation requirements. If they remain uncertain as to their objectives, other students need not select a major (and/or a collateral) until sometime during the sophomore year.

A NOTE FOR FIRST SEMESTER JUNIORS

No later than their first semester as a junior, all students should fill out a General Academic Plan form, secure the approval of their adviser and academic dean, and file it with the registrar. This form provides the student an opportunity to indicate how he has met or will meet the three University requirements (LES, distribution, and tool subject) as well as the requirements of his college and major (and his minor or collateral if he has chosen one). The General Academic Plan is the document the registrar uses to determine if a student has met all the requirements for graduation. In addition, as early in the senior year as possible, the registrar provides the student and his adviser with an audit of the courses remaining to be completed before graduation can be certified. The General Academic Plan, the UWGB catalog, and the student's transcript are the bases of the audit.



The Concentrations

The UWGB student must select an environmental problem on which to focus. This concentration requires 30 credits at the junior-senior level reflecting an interdisciplinary focus on an environmental problem. Concentration programs are outlined on the following pages in alphabetical order. Abbreviations in the headings denote the theme college that administers each concentration.

The Concentration in Analysis-Synthesis (CCC)

Professor: I. Korner (acting chairman).
Associate Professors: C. Crandall, E. Havens, F. Kersten, L. Witherell.
Assistant Professors: P. Abrahams, J. Barger, E. Bottemiller, T. Daniels, H. Gerend, J. Gerend, G. Greif, W. Herrscher, J. LaMalfa, D. Moews, L. Rudolph, P. Schlueter, J. Shier, W. Simpson, T. Tasch. E. M. Thron, J. S. Yake.
Instructors: J. Belz, H. Cliadakis, W. Dyer, L. Foulkes, D. Galaty, D. Hrubesky, R. Johnson, S. Kovalenko, C. Krog, J. McHale, M. Murphy, E. Pence, I. Rogers, J. Sisk, J. Wahl, D. Webb.
Lecturer: S. Hieber.

The concentration in analysis-synthesis emphasizes the need of every human being to "take a stand" on values. Each individual, consciously or unconsciously, performs an integrative, evaluative, creative function in developing, assimilating, and establishing values, beliefs, and opinions. The value structure he comes up with is uniquely his own, representing his individuality.

The student choosing the concentration in analysis-synthesis must meet general University requirements. In addition, he must select 30 credits of junior or senior level courses related to the concentration. If he selects a concentration-option, he must take 36, approximately 24 of which are in the disciplinary option.

Each student is encouraged to develop an individual program and will be assisted in this effort by an assigned faculty adviser. The following sample programs, *value evaluation* and *value formation,* are illustrations of programs that could be developed. Both programs are intimately related to courses in philosophy, history, and literature in the College of Creative Communication and to courses in sociology, psychology, economics, and political science in the College of Community Sciences.

Courses in growth and development in the College of Human Biology can also be considered. The student selecting the latter alternative may develop a joint program between colleges with the approval of his advisers and the respective deans.

Areas, Courses, and Credits

Value Evaluation
Selected course in economics, 3 cr.
Growth and Development 433, Adulthood and Later Maturity, 3 cr.
History 308, 309, History of Modern Science, 3, 3 cr.
Literature and Language: English-American 333, Literary Themes, 3 cr.
Selected foreign literature-language courses, 6 cr.
Selected course in philosophy, 3 cr.
Political Science 402, Political Values and Ideologies, 3 cr.

Value Formation
Anthropology 303, Cultural Ecology, 3 cr.
History 405, History of Technological Advancement, 3 cr.
Literature and Language: English-American 333, Literary Themes, 3 cr.
Literature and Language: English-American 334, Literary Isms, 3 cr.
Selected course in philosophy, 3 cr.
Psychology 309, Psychology of Motivation, 3 cr.
Sociology 303, Theories of Societal Development and Change, 3 cr.
Sociology 310, Philosophy and Sociology of Leisure, 3 cr.

The Concentration in Communication-Action (CCC)

Professor: P. Mann.
Associate Professors: C. Cohrs, J. Frisch, M. Kazar, W. King, A. Matulis (acting chairman), W. Prevetti.
Assistant Professors: J. Abraham, R. Fritz, J. Ivanoff, L. Iverson, R. Kersten, L. Locksmith, R. Pum, R. Ray, R. Wengatz, R. Williams.
Instructors: D. Fennema, E. Frame, P. Kimmell, D. Semmes, H. Williams.
Lecturer: L. Ives.

The concentration in communication-action emphasizes the tendency of human beings to create reflections of themselves and others and to communicate with each other through their creations.

The student concentrating in communication-action must meet general all-University requirements. In addition he must select 30 credits of junior or senior level courses related to the concentration. If he selects a concentration-option, he must take 36 credits, approximately 24 of which are in the disciplinary option.

Each student is encouraged to develop an individual program and will be assisted in this effort by an assigned faculty adviser. The following sample programs, *value communication* and *value expression,* are illustrations of programs that could be developed. Both programs are related to courses in the visual and performing arts and to communication arts and sciences in the College of Creative Communication, as well as to courses in the College of Community Sciences. Students may develop a joint program between colleges, with approval of their advisers and the respective deans.

Areas, Courses, and Credits

Value Expression

Literature and Language—selected courses in writing and structure of language.
Mass Communications 305, Television and Radio News Writing, 3 cr.
Performing Arts—selected courses in music, drama, and the dance (especially voice and movement and musical expression of different cultures).
Sociology 310, Philosophy and Sociology of Leisure, 3 cr.
Visual Arts—selected courses (especially design and drawing and creative design).

Value Communication

Communication Arts and Sciences 226, Theory and Practice of Group Discussion, 3 cr.
History 302, 303, History of American Thought and Culture, 3,3 cr.
Literature and Language: English-American 313, Major English Prose Fiction, 3 cr.
Literature and Language: English-American 331, Major American Prose Fiction, 3 cr.
Performing Arts: Drama 311, Dramaturgy (Playwriting), 3 cr.
Performing Arts: Music 110, Music in Perspective, 3 cr.
Selected course in philosophy, 3 cr.
Political Science 302, Community Political Behaviors, 3 cr.
Psychology 309, Psychology of Motivation, 3 cr.
Psychology 335, Psychology of Attitudes and Public Opinion, 3 cr.
Psychology 337, Social Behavior Dynamics, 3 cr.
Sociology 303, Theories of Societal Development and Change, 3 cr.

The Concentration in Ecosystem Analysis (CES)

Professors: H. Guilford, R. Maier, F. Sargent.
Associate Professors: A. Goldsby, D. Moore, L. Schwartz, K. White (acting chairman).
Assistant Professors: F. Fischbach, D. Girard, H. Harris, J. Huddleston, W. Johnson, A. Loomer, J. Maki, M. Morgan, T. Mowbray, J. Norman, E. Robkin, P. Sager, V. Sharma, N. Stahl, T. Thompson, J. Wiersma.
Instructors: L. Espenscheid, G. Keepers.
Lecturers: A. Berquist, P. Davis, W. Harvey, J. Long, G. Miller, M. Regan, J. Short, J. Speth.

The dynamics of the flows and transactions of energy and materials in the ecosystem and the processes governing the regulation of numbers of organisms must be understood both qualitatively and quantitatively for man to develop a wise strategy for the use and management of biological and other natural resources. With increasing intensity and scope, man intervenes in the dynamics of the ecosystem to increase its productivity or to regulate the flows and transactions for his own ends. These interventions include the construction of a man-made ecosystem (agriculture), the use of fertilizers and biocides to regulate biological productivity, and conscious weather modification to alter the frequency and distribution of precipitation. These interventions cannot be undertaken intelligently without a full understanding of their impact on the processes of the ecosystem. Inadvertent and unintelligent intervention may produce serious and irreversible changes that outweigh the benefits of the ecological manipulation. The objective of the concentration in ecosystem analysis is to prepare individuals to make substantial contributions to the understanding of the dynamics of the ecosystem.

The student concentrating in ecosystem analysis enters the College of Environmental Sciences in the freshman or sophomore year and should complete the college core requirements by the end of his sophomore year. He must complete 30 credits in 300- and 400-level courses. It is recommended that he include in these 30 credits:
Biology: Ecology 302, Principles of Ecology
Environmental Sciences 310, Environmental Measurement

The remaining credits may be elected from groups of courses according to the area in which the student has chosen to concentrate. A few example combinations are outlined below. A student should in consultation with his adviser work out the program that best fits his career goals.

Areas, Courses, and Credits

Systems Ecology
(ecological models)
Biology: Ecology 303, Productivity of the Ecosystem, 3 cr.
Environmental Sciences 440, Applied Environmental Science, 3 cr.
Mathematics 211, Calculus and Analytic Geometry III, 5 cr.
Mathematics 308, Differential Equations and Matrix Algebra, 5 cr.
Mathematics 311, Advanced Calculus, 3 cr.
Mathematics 355, Optimization, 3 cr.
Mathematics 360, Theory of Probability, 3 cr.
Mathematics 361, Theoretical Statistics, 3 cr.
Mathematics 366, Theory of Games, 3 cr.
Mathematics 452, Systems Simulation, 3 cr.

Communities and Populations
Biology 303, Genetics, 3 cr.
Biology: Ecology 402, Population Biology, 3 cr.
Biology: Ecology 403, Community Biology, 3 cr.
Biology: Entomology 302, Principles of Entomology, 3 cr.
Biology: Microbiology 302, Principles of Microbiology, 4 cr.
Biology: Microbiology 402, Virology, 3 or 4 cr.
Biology: Zoology 403, General Limnology, 3 cr.
Biology: Zoology 420, Principles of Parasitology, 3 cr.
Chemistry 430, Environmental Biochemistry, 4 cr.

Physiological Ecology
(environmental impact on individual organisms)
Biology 303, Genetics, 3 cr.
Biology: Botany 350, Plant Physiology, 4 cr.
Biology: Ecology 430, Elements of Biometeorology, 3 cr.
Biology: Physiology 302, Comparative Physiology, 3 or 4 cr.
Biology: Physiology 402, Mammalian Physiology, 4 cr.
Chemistry 321, Physical Chemistry, 4 cr.
Chemistry 430, Environmental Biochemistry, 4 cr.
Chemistry 441, Air Chemistry, 4 cr.

Chemistry 442, Water Chemistry, 4 cr.
Chemistry-Physics 320, Thermodynamics and Kinetic Theory, 3 cr.
Physics 306, Biophysics, 3 cr.
Physics 350, Meteorology, 3 cr.

Selected courses from other theme colleges or the School of Professional Studies in such subjects as anthropology, economics, regional planning, geography, administration and management, public policy, and political science may be used to augment any of the above three areas.

The Concentration in Environmental Control (CES)

Professor: F. Byrne.
Associate Professors: T. McIntosh, D. Moore (acting chairman).
Assistant Professors: A. Bedrosian, C. Bouc, R. Cook, L. Corrado, W. Guither, R. Lanz, J. C. Lindem, V. Nair, R. Park, N. Petrakopoulos, J. Pezzeta, S. Randall, C. Rhyner, W. Riemen, T. Van Koevering, L. Weis, R. Wenger.
Instructors: M. Anderson, A. Dickison, D. Herrick, J. Moran, L. Purchatzke, C. Richards, F. Schnabl.
Lecturers: R. Caston, A. Enneper, C. Lamers, J. Landis, C. Leonard, F. Miller, N. Nirschl, L. Oswald, R. Sogard, J. Verdette.

Among the most pressing problems that face man are those stemming from his use of and impact on natural resources. The problems include environmental pollution from human and industrial wastes; the conservation of resources such as fossil fuels, minerals, and wildlife; the conflict of interests arising from multiple use of resources.

Environmental pollution and the demands on natural resources threaten the biosphere. Because man depends upon the productivity of the biosphere for his subsistence and upon these resources to sustain his civilization, he must develop an appropriate strategy for the wise use and management of the biological and physical resources. The objective of the concentration in environmental control is to prepare individuals to participate in the solution of these complex and diverse problems.

The student concentrating in environmental control enters the College of Environmental Sciences in the freshman or sophomore year and should complete the college core requirements by the end of the sophomore year. He must also complete 30 credits in 300- and 400-level courses. Included in these 30 credits should be:

Biology: Ecology 302, Principles of Ecology
Earth Science 303, Conservation of Natural Resources
Environmental Sciences 310, Environmental Measurement

Also recommended are:
Environmental Sciences 420, Resource Management Strategy
Environmental Sciences 440, Applied Environmental Science

Credits may be elected from groups of courses according to the area in which the student has chosen to concentrate. A few example combinations are outlined below. A student should in consultation with his adviser work out the program that best fits his career goals.

Areas, Courses, and Credits

Air
Chemistry 313, Analytical Chemistry, 4 cr.
Chemistry 315, Nuclear and Radiochemistry, 4 cr.
Chemistry 441, Air Chemistry, 4 cr.
Chemistry-Physics 320, Thermodynamics and Kinetic Theory, 3 cr.
Environmental Sciences 351, Climatology, 3 cr.
Environmental Sciences 430, Community Air Pollution, 3 cr.
Environmental Sciences 431, Air Pollution Control, 3 cr.
Physics 340, Fluid Mechanics, 3 cr.

Physics 350, Meteorology, 3 cr.
Physics 450, Air Pollution Meteorology, 3 cr.

Water
Biology: Zoology 402, Ichthyology, 3 cr.
Biology: Zoology 403, General Limnology, 3 cr.
Chemistry 313, Quantitative Analysis, 4 cr.
Chemistry 442, Water Chemistry, 4 cr.
Chemistry-Physics 320, Thermodynamics and Kinetic Theory, 3 cr.
Earth Science 302, Geologic Evolution of the Earth, 4 cr.
Earth Science 330, Surface and Ground Water, 3 cr.
Earth Science 331, Elements of Marine Science, 3 cr.
Earth Science 430, Hydrology, 3 cr.
Earth Science 431, Water Pollution, 4 cr.
Environmental Sciences 351, Climatology, 3 cr.
Physics 340, Fluid Mechanics, 3 cr.
Physics 350, Meteorology, 3 cr.

Land
Biology: Ecology 420, Landscape Ecology, 3 cr.
Chemistry 430, Environmental Biochemistry, 4 cr.
Chemistry 443, Soil Chemistry, 4 cr.
Earth Science 302, Geologic Evolution of the Earth, 4 cr.
Earth Science 304, Descriptive Astronomy, 3 cr.
Earth Science 320, The Soil Environment, 3 or 4 cr.
Earth Science 330, Surface and Ground Water, 3 cr.
Earth Science 350, Field Geology, 3 cr.
Earth Science 420, Soil Ecology and Geography, 3 cr.
Earth Science 470, Geomorphology of the Great Lakes Region, 3 cr.
Physics 440, Soil Physics, 3 cr.

Natural Resources
Biology: Ecology 303, Productivity of the Ecosystem, 3 cr.
Biology: Ecology 402, Population Biology, 3 cr.
Biology: Ecology 430, Elements of Biometeorology, 3 cr.
Biology: Zoology 320, Field Zoology, 3 cr.
Earth Science 340, Minerals, Rocks, and Mineral Resources, 3 cr.
Earth Science 441, Earth Resources I: Minerals, 4 cr.
Earth Science 442, Earth Resources II: Rocks, 4 cr.
Environmental Sciences 320, Renewable Resources, 3 cr.
Mathematics 366, Theory of Games, 3 cr.

Selected courses from other theme colleges or the School of Professional Studies in such subjects as economics, regional planning, geography, administration and management, public policy, and political science may be used to augment any of the above four areas.

The Concentration in Human Adaptability (CHB)

Professor: W. Kaufman (chairman).
Assistant Professors: C. Mason, C. Sontag.

The health of individuals and of populations is the ability to adjust and adapt to countless stresses—physical, chemical, biological, and mental (perceptual and conceptual)—within the environment. Human adaptability arises from variability of the human species and from the flexibility of the individual. The basic components of human adaptability are collections of biochemical, morphological, physiological, and behavioral traits and mechanisms. Human adaptability passes through stages of immaturity, maturity, and decay. Both the stages of adaptability and the groups of adaptive traits are individually distinctive, presumably determined in part by inheritance and in part by unique environmental experience.

The purpose of the concentration in human adaptability is to prepare individuals to undertake broad and careful studies of man within the context of his total environment. Because that environment is rapidly changing, it is mandatory that knowledge on the scope and range of the adaptability of man be constantly enlarged. Man appears to be determined to alter his own environment. One important question becomes "What is the optimum environment for man?"

The student concentrating in human adaptability enters the College of Human Biology in the freshman or sophomore year and must complete the college core course requirements by the end of his sophomore year. He must also complete 30 credits in 300- and 400-level courses. It is recommended that he include in these 30 credits:

Biology 325, Biological Instrumentation
Biology: Ecology 410, Principles of Human Ecology
Human Biology 342, Human Evolution
Human Biology 440, Racial and Genetic Variations of Man
Human Biology 310, Introduction to Human Genetics

The remaining advanced credits may be elected from the following courses according to the student's special interests and goals:

Areas, Courses, and Credits

Chemistry
Chemistry 313, Analytical Chemistry, 4 cr.
Chemistry 315, Nuclear and Radiochemistry, 4 cr.
Chemistry 321, Physical Chemistry, 4 cr.
Chemistry 330, Biochemistry, 4 cr.
Chemistry 422, Protein Chemistry, 3 cr.
Chemistry-Physics 320, Thermodynamics and Kinetic Theory, 3 cr.

Physics
Physics 302, Electromagnetic Radiation, 4 cr.
Physics 305, Electronic Aids to Measurement, 4 cr.

Mathematics
Mathematics 308, Differential Equations and Matrix Algebra, 5 cr.
Mathematics 311, Advanced Calculus, 3 cr.
Mathematics 321, 322, Linear and Matrix Algebra I, II, 3, 3 cr.
Mathematics 355, Optimization, 3 cr.
Mathematics 360, Theory of Probability, 3 cr.
Mathematics 361, Theoretical Statistics, 3 cr.
Mathematics 452, Systems Simulation, 3 cr.

Biology
Biology 302, History of Biology, 3 cr.
Biology 303, Genetics, 3 cr.
Biology: Ecology 402, Population Biology, 3 cr.
Biology: Physiology 402, Mammalian Physiology, 4 cr.
Biology: Zoology 303, Comparative Anatomy of Vertebrates, 5 cr.
Human Biology 330, Human Growth, Development, and Senescence, 3 cr.

Anthropology
Anthropology 303, Cultural Ecology, 3 cr.
Anthropology 307, Heredity, Environment, and Human Population, 3 cr.
Human Biology 340, Human Skeleton, 3 cr.

Psychology
Psychology 205, Psychology of Human Adjustment, 3 cr.
Psychology 309, Psychology of Motivation, 3 cr.
Psychology 337, Social Behavior Dynamics, 3 cr.

The Concentration in Human Development (CHB)

Professor: R. Hartley (chairman).
Assistant Professor: S. Cannizzo.
Lecturer: M. Ray.

Among the major problems of biology in general and human biology in particular is study of the processes and mechanisms regulating the physical growth and development of organisms. Little, for example, is known about the development of homeostasis. For man, these problems have come into increasing prominence with the conquest of infectious diseases. Congenital diseases and malformations have emerged as increasingly important causes of neonatal mortality.

At the same time we have become increasingly aware of the problems related to mental growth and development. Problems of intellectual development are now demanding attention as well as problems of emotional-social development. To deal with the problems of mental retardation associated with cultural deprivation, socially ineffective and undesirable behavior, and the chronically disabling effects of neuroses and psychoses requires intensive and specific types of training. In addition, we are more and more cognizant of the importance of knowledge about the wellsprings of human functioning for any occupation dealing with people, e.g. teaching, nursing, work with preschool children, social service, recreation, guidance, etc. The purpose of the concentration in mental growth and development is to begin preparing young people to deal effectively with other persons at various levels of development, and characterized by various degrees of normalcy.

The student who concentrates in physical growth and development enters the College of Human Biology as a freshman or sophomore and should complete the following prerequisites by the end of the sophomore year:

Biology 202, Biology of Cells
Biology 203, Biology of Organisms
Chemistry-Physics 110, 111, and 112 or 110, 211, and 212, Chemistry-Physics (See footnote on page 30)
Human Biology 102, Introduction to Human Adaptability
Mathematics 202, Calculus and Analytic Geometry I

It is recommended that the student planning to enter graduate school also prepare himself in a modern foreign language.

The student concentrating in mental growth and development does so jointly between the Colleges of Human Biology and Community Sciences. He must complete the following prerequisites by the end of the sophomore year:

Biology 202, Biology of Cells
Biology 203, Biology of Organisms
Community Sciences 102, Man and His Social Environment
Human Biology 102, Introduction to Human Adaptability
Psychology 102, The Behavior and Experiences of Man

Also recommended are the following:

Anthropology 203, Understanding Changing Cultures **or**
Anthropology 204, Technological Change and Cultural Patterns
Anthropology 205, Culture and Personality
Community Sciences 203, Introduction to Urban Analysis **or**
Sociology 102, The City
Community Sciences 205, Social Science Statistics (or its equivalent)
Nutritional Science 232, Nutritional Significance of Food
Psychology 202, Introduction to Social Psychology

The student concentrating in human development must complete 30 advanced credits in 300- and 400-level courses. Included should be:

Growth and Development 331, Infancy and Early Childhood
Growth and Development 332, Middle Childhood and Adolescence
Growth and Development 433, Adulthood and Later Maturity
Human Biology 330, Human Growth, Development, and Senescence

Credits may be elected from groups of courses according to the area in which the student has chosen to concentrate. A few example combinations are outlined below. A student should in consultation with his adviser work out the program that best fits his career goals.

Areas, Courses, and Credits

Physical Growth and Development
Biology 303, Genetics, 3 cr.
Biology: Physiology 402, Mammalian Physiology, 4 cr.
Biology: Zoology 310, Embryology, 4 cr.
Biology: Zoology 311, Histology, 3 cr.
Chemistry 330, Biochemistry, 4 cr.
Chemistry 421, Vitamins and Hormones, 2 cr.
Chemistry 422, Protein Chemistry, 3 cr.
Human Biology 310, Introduction to Human Genetics, 3 cr.

Mental Growth and Development
Growth and Development 333, Observation and Interpretation of Child Behavior, 3 cr.
Growth and Development 334, Play and Creative Activities in Childhood, 3 cr.
Growth and Development 336, Sex Role Development in Contemporary Society, 3 cr.
Growth and Development 431, Cognitive Development and Facilitation in Childhood and Adolescence, 3 cr.
Growth and Development 432, Cultural Impacts on Human Development, 3 cr.
Growth and Development 435, Developmental Problems and Deviations, 3 cr.

Courses dealing with marriage and family, group dynamics, developmental guidance, guidance of preschool groups, interpersonal communication, and social behavior dynamics also are recommended. Those who may wish to be certified in early childhood education should take care to include courses in play and creative activities, observation and interpretation of behavior, guidance of preschool groups, and the practicum in working with preschool groups. Combinations of courses from these lists also are possible to satisfy a concentration in human development.

The Concentration in Human Performance* (CHB)

The study of human performance is an important facet of a broad program in human biology, for capability to perform effectively and efficiently is fundamental to human survival in a technological age. The concentration in human performance capacity has several emphases.

First, human performance plays a major role in agricultural and industrial occupations. The efficiency with which the tasks associated with these occupations are carried out, the influence of environmental factors (e.g. heat, light, noise) on the working man, and the design of machinery and other mechanical devices to be used by the working man are major problems of a technological society.

Second, performance plays a major role in human adaptability to various stresses, modifying psychological and social relationships, and maintaining health in general. Since performance is a basic function for life as we know it, a proper understanding of performance must precede and accompany the complete understanding of life. The physiological mechanisms involved in the adaptation of the body to work constitute another approach in the study of the more comprehensive problems of organism-environment interaction, and it is logical to include their study in the curricula of the College of Human Biology.

Third, there is a focus on the stress placed on the body by certain types of activities and performances. There is a viewpoint which maintains that some types and degrees of stress are beneficial whereas others may be harmful. Validating this viewpoint is complicated by the great individual variability in desire and need for physical activity. Do all people need vigorous physical activity? If so, how much? If not, what differentiates those who do need exercise from those who do not?

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*This concentration will be offered when it is approved by the Coordinating Council for Higher Education.

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The student concentrating in human performance enters the College of Human Biology in the freshman or sophomore year and must complete the college core course requirements by the end of the sophomore year. He also must complete 30 credits in 300- and 400-level courses; the following are recommended:

Courses and Credits
Biology: Physiology 320, Kinesiology,* 3 cr.
Biology: Physiology 321, History of Study of Human Activity,* 3 cr.
Biology: Physiology 322, Fundamentals of Ergonomics,* 3 cr.
Biology: Physiology 402, Mammalian Physiology, 4 cr.
Biology: Physiology 420, Exercise Physiology,* 4 cr.
Biology: Physiology 430, Human Environmental Physiology, 4 cr.
Chemistry 330, Biochemistry, 4 cr.
Human Biology 330, Human Growth, Development, and Senescence, 3 cr.
Psychology 337, Social Behavior Dynamics, 4 cr.

The student concentrating in human performance may do so jointly between the Colleges of Human Biology and Community Sciences. In such a case a student must take 20 of his 30 advanced credits from the College of Human Biology courses and the remainder from selected courses in the College of Community Sciences in the behavioral sciences, in consultation with his adviser.

The Concentration in Modernization Processes (CCS)

Professor: E. Weidner.
Visiting Professor: G. Petrie.
Associate Professors: R. Fontera, R. Khare (acting chairman).
Assistant Professors: M. Greenberg, K. Kangayappan, R. Langlois, L. Nesberg, C. Pollis.
Instructors: F. W. Gaudet, N. Gaworek, E. Haney, H. Kolshus, L. Smith.
Lecturer: B. Baker.

Study of culture change in the direction of modernity requires an examination of those economic, political, and social factors that bring about changes in the essential values of the communities within which men live. Such values, in turn, influence the manner in which men arrange their economic, political, and social relationships. Effective participation in modern life depends on the understanding of such changes in values and makes social adaptation to essential changes in economic, political, and social institutions more likely.

Modernization processes involve changes in institutional arrangements and behavioral patterns, particularly in regard to technological, economic, political, and social systems. Traditional and agrarian cultures are in the process of adapting to very rapid technological change that tends to alter such cultures in the direction of becoming modern and industrial. Even the most modern countries such as the United States have pockets of underdevelopment. And modernization is a process characteristic of the whole of so-called "advanced" countries. It is a changing and ever-elusive goal. A focus on modernization processes affords a meaningful problem orientation to the study of the community sciences. Effective participation in the world community certainly depends on broad recognition of the complex modernization processes.

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*This course will not be available in 1970-71.

The student entering the concentration in modernization processes will increase his ultimate capacity to function within various kinds of business and governmental agencies. He will find the concentration a useful preparation for professional schools such as law, public administration, business administration, or social work. He will also find it excellent preparation for work with various private and public agencies engaged in community development both here and abroad. The student can begin his preparation while still an undergraduate by adding a disciplinary option or professional collateral to the concentration.

In addition to previously indicated requirements, the student must complete certain fundamental courses in anthropology, economics, geography, political science, psychology, and sociology. Among the courses most highly recommended are:

Courses and Credits

Anthropology 203, Understanding Changing Cultures, 3 cr.
Anthropology 204, Technological Change and Cultural Patterns, 3 cr.
Anthropology 310, Culture and Personality, 3 cr.
Community Sciences 204, Introduction to Modernization Processes, 3 cr. (required)
Community Sciences 498, Community Sciences Special Projects, 3 cr.
Economics 202, Macro Economic Analysis, 3 cr.
Economics 203, Micro Economic Analysis, 3 cr.
Economics 205, Comparative Economic Systems and Institutions, 3 cr.
Geography 376, Geography of Developing Areas, 3 cr.
Political Science 203, Politics of Developing Systems, 3 cr.
Political Science 204, Comparative Bureaucratic Behavior, 3 cr.
Psychology 202, Introduction to Social Psychology, 3 cr.
Psychology 205, Psychology of Human Adjustment, 3 cr.
Sociology 202, Introduction to Sociological Analysis, 3 cr.
Sociology 204, Collective Behavior, 3 cr.
Sociology 205, Social Change, 3 cr.

The Concentration in Nutritional Science* (CHB)

Professor: J. Beaton.
Visiting Associate Professor: A. R. Doberenz.
Assistant Professors: D. Deese, E. McIntosh, V. Zehren.
Instructor: D. Randall.

This concentration focuses on the limits of the biosphere to provide the energy and nutritional needs of the human biomass. The growing world population places an increased demand on man to produce and process food in sufficient supply.

Adequate food is basic to man's ability to control his environment. Methods for maximum utilization of the world's food resources must be explored, including improved methods of preservation, greater palatability, and nutritional value, particularly of low-cost foods. In addition to nutrition, the problems of malnutrition, obesity, and food faddism cannot be ignored. Society needs scientifically trained individuals who can attack these problems creatively. The rapid expansion of the food industry, with the constant development of new food products, is also dependent upon persons who are trained in this area. The concentration in nutritional science will serve to begin the training of individuals to undertake these important tasks.

The student who selects the concentration in nutritional science enters the College of Human Biology in the freshman or sophomore year and must complete the college core requirements by the end of the sophomore year. He must also complete 30 advanced credits in 300- and 400-level courses. It is recommended that he include in these 30 credits:

Chemistry 302, 303, Organic Chemistry I, II
Chemistry 330, Biochemistry

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*This concentration will be offered when it is approved by the Coordinating Council for Higher Education.

Nutritional Science 302, Nutrition and Culture
Nutritional Science 303, Food Science
Nutritional Science 305, Principles of Nutritional Science

The remaining advance credits may be elected from the following courses:

Courses and Credits
Biology: Ecology 303, Productivity of the Ecosystem, 3 cr.
Biology: Microbiology 302, Principles of Microbiology, 4 cr.
Biology: Microbiology 410, Microorganisms in Foods, 4 cr.
Biology: Physiology 402, Mammalian Physiology, 4 cr.
Chemistry 340, Energy Metabolism, 3 cr.
Chemistry 420, Mineral Metabolism, 3 cr.
Chemistry 421, Vitamins and Hormones, 2 cr.
Chemistry 422, Protein Chemistry, 3 cr.
Human Biology 330, Human Growth, Development, and Senescence, 3 cr.
Nutritional Science 403, Food Science Practicum,* 3 cr.
Nutritional Science 405, Nutritional Practicum,* 3 cr.
Nutritional Science 406, Community Nutrition,* 3 cr.
Nutritional Science 450, Food Sanitation, 4 cr.
Nutritional Science 451, Food Chemistry, 4 cr.

Alternatively, the student concentrating in nutritional science can do so jointly between the Colleges of Human Biology and Community Sciences. In such a case, a student must take 20 of his 30 advanced credits from the list above, and the remainder from economics and sociology in the College of Community Sciences in consultation with his adviser.

The Concentration in Population Dynamics (CHB)

Assistant Professor: C. Ihrke.

The most important problem facing mankind in this century is the population avalanche. The origins of the tremendous recent growth in the human population are simple to identify. The crux of the matter is to find a generally effective solution. Here teamwork is essential by individuals trained in the biology of man and in the behavioral sciences. Individuals capable of coping with this most complex circumstance are in great demand. It is the purpose of this concentration to educate individuals who can work toward the solution of this problem.

The student who selects this concentration enters the College of Human Biology in the freshman or sophomore year and must complete 30 advanced credits in 300- and 400-level courses. These credits can be elected from such courses as the following:

Courses and Credits
Anthropology 303, Cultural Ecology, 3 cr.
Anthropology 307, Heredity, Environment, and Human Population, 3 cr.
Anthropology 403, Racial and Genetic Variations of Man, 3 cr.
Biology: Ecology 402, Population Biology, 3 cr.
Biology: Ecology 410, Principles of Human Ecology, 3 cr.
Biology: Physiology 402, Mammalian Physiology, 4 cr.
Human Biology 310, Introduction to Human Genetics, 3 cr.
Human Biology 320, Introduction to Population Dynamics, 3 cr. (required)
Human Biology 420, Human Mating Behavior, 3 cr.
Human Biology 421, Problems of Population Regulation, 3 cr.
Psychology 337, Social Behavior Dynamics, 3 cr.

Alternatively, the student concentrating in population dynamics can do so jointly between the Colleges of Human Biology and Community Sciences. In such a case a student must take 20 of his 30 advanced credits from courses within the College of Human Biology and the remainder from selected courses in anthropology, psychology, and sociology in the College of Community Sciences, in consultation with his adviser.

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*Not available in 1970-71.

The Concentration in Regional Analysis (CCS)

Professor: R. Vlasin.
Associate Professor: J. Murray.
Assistant Professors: K. Ebisch, D. Gandre (acting chairman), L. Gorder, J. Kolka, W. Kuepper, I. Shariff.
Instructors: J. Berry, W. Laatsch.
Lecturers: C. Black, J. Herning, J. Rorabacher, A. Zander.

Regional analysis provides a meaningful focus in the study of the community sciences by the examination of economic, political, and social interactions within the context of a geographic region. Although citizens grant their ultimate political loyalties to nation-states, states within a federation, and other formal political subdivisions, their economic and social relationships tend to cluster within geographic regions. The effective application of individual capacities and the critical use of material resources depend on a clear understanding of the regional character of such primary interactions.

The student entering the concentration in regional analysis will be able to focus his studies of the community sciences in such a way as to increase his ultimate capacity to function within various kinds of business organizations or governmental agencies. He will find the field a useful preparation for professional schools such as law, business administration, or social work. The student can begin his preparation while still an undergraduate by adding a disciplinary option or professional collateral to the concentration.

In addition to previously indicated requirements, the student must complete certain fundamental courses in anthropology, economics, geography, political science, psychology, and sociology. Among the courses most highly recommended are:

Courses and Credits
Anthropology 202, Economic Anthropology, 3 cr.
Community Sciences 202, Introduction to Regional Analysis, 3 cr. (required)
Community Sciences 498, Special Readings in Community Sciences, 3 cr.
Economics 202, Macro Economic Analysis, 3 cr.
Economics 203, Micro Economic Analysis, 3 cr.
Economics 204, Regional Economic Analysis, 3 cr.
Geography 355, Introduction to Quantitative Methods of Spatial Analysis, 3 cr.
Geography 362, Geography of the Great Lakes Region of Africa, 3 cr.
Geography 372, Geography of the Great Lakes Regions of North America, 3 cr.
Political Science 202, State Government and Public Policy, 3 cr.
Psychology 202, Introduction to Social Psychology, 3 cr.
Sociology 202, Introduction to Sociological Analysis, 3 cr.

The Concentration in Urban Analysis (CCS)

Professor: E. Hartley.
Associate Professor: N. Pollis.
Assistant Professors: F. Armstrong (acting chairman), R. Jiobu, E. N. Swinerton.
Instructors: J. P. Aaronson, J. Gould, R. Klimek, E. S. Knowles, V. Kopitzke, C. J. Yarbrough.

Urban analysis gives a meaningful focus to the examination of economic, political, and social interactions within the context of metropolitan areas. Both in the United States and abroad, contemporary ecological problems have reached crisis proportions. Community life in the 20th century largely involves urban relationships and urban analysis, therefore becoming a major key to effective participation in contemporary life.

The student entering the concentration in urban analysis centers his studies to increase his ultimate capacity to function within various kinds of business and governmental organizations. Urban analysis also is a useful preparation for such professional schools as law, journalism, business administration, or social work. The student can begin his preparation while still an undergraduate by adding a disciplinary option or professional collateral to the concentration.

Urban Analysis

The student in this concentration must complete certain fundamental courses in anthropology, economics, geography, political science, psychology, and sociology. Among the courses most highly recommended are:

Courses and Credits

Anthropology 202, Economic Anthropology, 3 cr.
Community Sciences 203, Introduction to Urban Analysis, 3 cr. (required)
Community Sciences 498, Special Readings in Community Sciences, 3 cr.
Economics 202, Macro Economic Analysis, 3 cr.
Economics 203, Micro Economic Analysis, 3 cr.
Geography 341, Urban Geography, 3 cr.
Geography 355, Introduction to Quantitative Methods of Spatial Analysis, 3 cr.
Political Science 202, State Government and Public Policy, 3 cr.
Political Science 213, Urban Politics, 3 cr.
Psychology 202, Introduction to Social Psychology, 3 cr.
Sociology 203, Problems of American Minority Groups, 3 cr.
Sociology 204, Collective Behavior, 3 cr.

The Options

The student may, in addition to his concentration, select an option. A student who selects a concentration-option combination normally is required to take 36 credits at the 300 and 400 levels, 24 of which relate the option to the concentration.

This section describes the option programs and outlines the basic requirements for each. The options are listed alphabetically, with abbreviations following the headings indicating college responsibility.

Option in Anthropology (CCS)

Associate Professor: R. Khare; *Assistant Professor:* C. Mason; *Instructors:* F. Gaudet, R. Klimek.

Anthropology involves the systematic study of man's place in the natural world and includes his evolutionary history and development, the organization of basic social life, his cultural patterns, and symbolic systems. Anthropology shows a particular concern for comparisons between differing societies and, in particular, those universals of culture that exist in the midst of wide variations in the economic, political, and social ways of life. Courses in anthropology concentrate within the two fields of cultural anthropology and physical anthropology.

The student who chooses the anthropology option will find that the skills and capacities gained through such a program can be applied in a wide variety of vocations and professions; government service at the local, state, and national levels, work with private and public agencies both here and abroad, and in education.

With the approval of his faculty adviser and the dean of the College of Community Sciences, a student may select 24 credits of 300- and 400-level anthropology courses, relating them to one of the concentrations. This constitutes an anthropology option. The following listing arranges the principal courses in terms of two fields within the discipline of anthropology. See also the courses listed under the several concentrations and the complete list of anthropology courses presented in chapter 4.

Areas, Courses, and Credits

Cultural Anthropology
Anthropology 302, Peoples and Cultures of the Northern Great Lakes Region, 3 cr.
Anthropology 303, Cultural Ecology, 3 cr.
Anthropology 304, Family, Kin, and Community, 3 cr.
Anthropology 402, Comparative Social Structures, 3 cr.
Anthropology 498, Contemporary Problems in Anthropology, 3 cr.

Physical Anthropology
Anthropology 305, Human Evolution, 3 cr.
Anthropology 306, Prehistoric Man and His Surroundings, 3 cr.
Anthropology 307, Heredity, Environment, and Human Population, 3 cr.
Anthropology 403, Race and Genetic Variation of Man, 3 cr.
Anthropology 498, Contemporary Problems in Anthropology, 3 cr.

Another aspect of anthropology, linguistics, is largely appropriate for the graduate level. For those planning graduate work in linguistics, an introductory undergraduate course is offered in the College of Creative Communication.

Option in Biology (CHB)

Professors: J. Beaton, H. Guilford, W. Kaufman, R. Maier, F. Sargent; *Associate Professors:* A. Goldsby, L. Schwartz, K. White; *Visiting Associate Professor:* A. Doberenz; *Assistant Professors:* R. Cook, H. Harris, C. Ihrke, W. Johnson, J. Maki, E. McIntosh, T. Mobray, V. Nair, P. Sager, C. Sontag, T. Thompson, V. Zehren; *Instructor:* D. Randall; *Lecturers:* P. Davis, E. Langlois, M. Ray, G. Benham.

The option in biology makes it possible for students whose interests focus on organisms other than man to prepare for a career in biology. It also satisfies a desire among certain students for an interdisciplinary focus on the human organism. Biology of other organisms contributes most importantly to understanding the biology of man. In this sense, the option plays a significant role in the educational program of the College of Human Biology and the College of Environmental Sciences.

The student electing an option in biology must take:

Biology 202, Biology of Cells
Biology 203, Biology of Organisms

It is recommended that he give attention to prerequisites (such as chemistry, physics, and mathematics) for many of the advanced courses listed in this option. Among the 24 credits of advanced courses that must be taken to complete a concentration-option, it is recommended that the student include:

Biology 302, History of Biology
Biology: Ecology 302, Principles of Ecology
Environmental Sciences 310, Environmental Measurement

With the assistance of his faculty adviser, the student may formulate his program from such courses as the following:

*Areas, Courses and Credits**

Botany
Botany 309, Plant Taxonomy, 3 cr.
Botany 310, Systematics and Taxonomy, 3 cr.
Botany 320, Field Botany, 3 cr.
Botany 350, Plant Physiology, 4 cr.
Botany 410, Dendrology, 3 cr.

Ecology
Ecology 303, Productivity of the Ecosystem, 3 cr.
Ecology 310, Plant Ecology, 3 cr.
Ecology 311, Principles of Plant Distribution, 3 cr.
Ecology 402, Population Biology, 3 cr.
Ecology 403, Community Biology, 3 cr.
Ecology 410, Principles of Human Ecology, 3 cr.
Ecology 420, Landscape Ecology, 3 cr.
Ecology 430, Elements of Biometeorology, 3 cr.
Zoology 403, General Limnology, 3 cr.
Earth Science 302, Geologic Evolution of the Earth, 4 cr.
Earth Science 310, Paleobiology, 4 cr.
Earth Science 420, Soil Ecology and Geography, 3 cr.

Entomology
Entomology 302, Principles of Entomology, 3 cr.
Entomology 310, Taxonomy of Insects, 3 cr.
Entomology 330, Insect Physiology, 3 cr.

Microbiology
Microbiology 302, Principles of Microbiology, 4 cr.
Microbiology 303, Advanced Microbiology, 3 cr.
Microbiology 306, Mycology, 3 cr.
Microbiology 310, Microbial Physiology, 3 cr.
Microbiology 320, Microbial Genetics, 3 cr.
Microbiology 402, Virology, 3 or 4 cr.
Microbiology 403, Pathogenic Microorganisms, 3 cr.
Microbiology 408, Forest and Plant Pathology, 3 cr.
Microbiology 410, Microorganisms in Foods, 3 cr.
Zoology 420, Principles of Parasitology, 3 cr.

Physiology
Physiology 302, Comparative Physiology, 3 or 4 cr.
Physiology 402, Mammalian Physiology, 4 cr.
Physiology 430, Human Environmental Physiology, 4 cr.

Zoology
Zoology 302, Vertebrate Zoology, 3 cr.
Zoology 303, Comparative Anatomy of Vertebrates, 5 cr.
Zoology 310, Embryology, 4 cr.
Zoology 311, Histology, 3 cr.
Zoology 320, Field Zoology, 3 cr.
Zoology 402, Ichthyology, 3 cr.

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*Descriptions of courses in botany, ecology, entomology, microbiology, physiology, and zoology are listed under biology in Chapter 4.

Zoology 403, General Limnology, 3 cr.
Zoology 420, Principles of Parasitology, 3 cr.

Chemistry
Chemistry 330, Biochemistry, 4 cr.
Chemistry 340, Energy Metabolism, 4 cr.
Chemistry 420, Mineral Metabolism, 3 cr.
Chemistry 421, Vitamins and Hormones, 2 cr.
Chemistry 422, Protein Chemistry, 3 cr.
Chemistry 430, Environmental Biochemistry, 4 cr.
Physics 306, Biophysics, 3 cr.

Option in Business Administration (SPS)

Professor: R. Posey.
Visiting Professors: N. Dang, G. Petrie.
Visiting Associate Professor: H. Jadwani.
Assistant Professors: R. Jiobu, D. Ward.
Lecturers: J. Artzberger, F. Garrow, L. Karman, J. Kenny, B. Larsen, W. Parsons, G. Ravet, F. Waedt, V. Waggoner, A. Zander.

The student who wishes a professional focus in business administration may elect the option in business administration, earning the degree of Bachelor of Science (Administration). As a sophomore or junior he is required to take the following two-course sequence:

Organization and Operations 202, Business and Its Environment
Organization and Operations 203, Government and Business

The student in this option next chooses six credits each in any of four of the following administration fields: distribution, finance, labor relations, organization and operations, and quantitative methods. He must also select six additional credits in whichever of the four fields is his principal interest. Courses particularly relevant to this option are:

*Courses and Credits**
Distribution 302, Principles of Distribution, 3 cr.
Distribution 310, Transportation and Purchasing, 3 cr.
Distribution 402, Retailing and Wholesaling, 3 cr.
Distribution 403, Principles of Advertising, 3 cr.
Distribution 404, Marketing Research, 3 cr.
Distribution 407, International Distribution and Marketing, 3 cr.
Distribution 410, Applied Motivational Research, 3 cr.
Finance 302, Money and Banking, 3 cr.
Finance 303, Corporation Finance, 3 cr.
Finance 305, Principles of Risk Management, 3 cr.
Finance 402, Problems of Investment, 3 cr.
Finance 403, Financial Planning and Control, 3 cr.
Labor Relations 302, Personnel Administration in Business, 3 cr.
Labor Relations 310, Labor Unions in America, 3 cr.
Labor Relations 312, Collective Bargaining, 3 cr.
Labor Relations 402, Problems in Labor Relations, 3 cr.
Labor Relations 403, Labor Legislation and Administration, 3 cr.
Labor Relations 412, Cases in Collective Bargaining, 3 cr.
Labor Relations 420, International Labor Relations, 3 cr.
Organization and Operations 302, Principles of Organization and Operation, 3 cr.
Organization and Operations 304, Industrial Management, 3 cr.
Organization and Operations 310, Small Business Management in the Northern Great Lakes Region, 3 cr.
Organization and Operations 402, Planning, Control, and Routinization, 3 cr.
Quantitative Methods 204, Introductory Accounting, 3 cr.
Quantitative Methods 205, Intermediate Accounting, 3 cr.

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*Course descriptions are listed under Administration in Chapter 4.

Quantitative Methods 206, Accounting for Administrators, 3 cr.
Quantitative Methods 230, Quantitative Methods in Administration, 3 cr.
Quantitative Methods 302, Cost Accounting, 3 cr.
Quantitative Methods 303, 304, Financial Accounting, Theory, and Practice I, II, 3, 3 cr.
Quantitative Methods 315, 316, Business Law I, II, 3, 3 cr.
Quantitative Methods 403, Auditing Standards and Procedures I, 3 cr.
Quantitative Methods 410, Income Tax Theory and Practice, 3 cr.

The student in the business administration option must also select at least 24 credits in economics. Courses should be planned with the student's adviser so that he may build a program relevant to his field of business specialization. Courses in related areas may be included where appropriate.

A required capstone course sequence in the business administration option is Organization and Operations 491-492, Problems of Business Management I, II, which should be taken in the student's senior year.

The student who intends to prepare for the Certified Public Accountant examination is urged to take all the courses in the area of Quantitative Methods except 230.

Option in Chemistry (CES)

Assistant Professors: D. Deese, W. Guither, J. Norman, R. Park, S. Randall, W. Riemen, J. Wiersma; *Instructors:* L. Purchatzke, C. Richards, F. Schnabl.

Chemistry is fundamental to the study of the biophysical environment, the dynamics of ecosystems, and the metabolic processes of living organisms. It is a key discipline for understanding the processes that have led to environmental pollution and for developing remedies for restoring and maintaining the quality of the environment.

The student electing an option in chemistry must take the following courses:
Chemistry-Physics 110, 211, 212, Chemistry-Physics
Chemistry 302, 303, Organic Chemistry I, II
Chemistry 313, Analytical Chemistry

In addition, the student with the assistance of his faculty adviser must select a minimum of 12 credits from the following or closely related courses which relate the option to the concentration:

Courses and Credits
Chemistry 315, Nuclear and Radiochemistry, 4 cr.
Chemistry 321, Physical Chemistry, 4 cr.
Chemistry 410, Inorganic Chemistry, 4 cr.
Chemistry 413, Instrumental Analysis, 4 cr.
Chemistry 430, Environmental Biochemistry, 4 cr.
Chemistry 441, Air Chemistry, 4 cr.
Chemistry 442, Water Chemistry, 4 cr.
Chemistry 443, Soil Chemistry, 4 cr.
Chemistry-Physics 320, Thermodynamics and Kinetic Theory, 3 cr.
Earth Science 431, Water Pollution, 4 cr.
Physics 302, Electromagnetic Radiation, 4 cr.
Physics 306, Biophysics, 3 cr.

The student desiring an option in chemistry in its applications to human biology may elect courses such as the following:
Biology: Microbiology 303, Advanced Microbiology, 3 cr.
Chemistry 330, Biochemistry, 4 cr.
Chemistry 340, Energy Metabolism, 4 cr.
Chemistry 420, Mineral Metabolism, 3 cr.
Chemistry 421, Vitamins and Hormones, 2 cr.
Chemistry 422, Protein Chemistry, 3 cr.

Option in Communication Arts and Sciences (CCC)

Assistant Professor: D. O'Brien; *Lecturers:* D. Byrne, M. Culross.

The communication arts and sciences option is closely interwoven with the concentrations in the College of Creative Communication, especially the expression and influence aspects of communication-action and the opinion formation aspects of analysis-synthesis. In fact, communication arts and sciences courses are grouped in these three categories. Students may elect 24 credits of advanced work at the junior and senior level from such courses and supporting courses in the College of Community Sciences to fulfill the requirements of the option in communication arts and sciences.

Work in expression leads to increased technical proficiency in speech. Work in the influence and opinion formation aspects of communication arts and sciences borrows heavily from the behavioral sciences. A joint College of Creative Communication-College of Community Sciences option can be arranged in these areas by a student, in consultation with his adviser and with approval of the respective deans. A student normally will select courses from at least two of the categories into which courses are divided. Courses may be selected from the following list:

Areas, Courses, and Credits

Expression
Communication Arts and Sciences 102, Fundamentals of Public Speaking, 3 cr.
Performing Arts: Music, Applied 101-140, 201-240, Private Instruction, Voice and Instruments, 2 cr. each
Philosophy 306, Linguistic Analysis, 3 cr.

Influence
Communication Arts and Sciences 102, Fundamentals of Public Speaking, 3 cr.
Communication Arts and Sciences 262, Argumentation and Debate, 3 cr.
Communication Arts and Sciences 266, Theory and Practice of Group Discussion, 3 cr.

Opinion Formation
Administration: Distribution 410, Applied Motivational Research, 3 cr.
Communication Arts and Sciences 266, Theory and Practice of Group Discussion, 3 cr.
Mass Communications 430, Mass Media and Society, 3 cr.
Mathematics 260, Elementary Statistics, 3 cr.
Psychology 335, Psychology of Attitudes and Public Opinion, 3 cr.

See also relevant courses in sociology, psychology and political science.

Option in Earth Science (CES)

Professor: F. Byrne; *Associate Professor:* T. McIntosh; *Assistant Professors:* A. Bedrosian, J. Huddleston, M. Morgan, J. Pezzetta, L. Weis; *Instructor:* J. Moran.

The option in earth science offers the student a basic program that will develop for him a detailed understanding of his physical environment. By directed expansion into other disciplines, the option provides the student with the fundamentals required for graduate studies leading to professional qualification in theoretical geology, engineering geology, hydrogeology, economic geology, marine geology-oceanography, and paleobiology.

The earth science option also provides basic courses for students interested in pursuing career goals in soil science ecology, conservation, agriculture, teaching earth science in secondary schools, urban analysis, and regional analysis. In addition to the courses listed below, there are a number of courses related to the earth sciences especially in chemistry, physics, and geography. Faculty of the College of Environmental Sciences will develop with the student the educational program most useful to him in this and related options, as well as advise him of career opportunities.

Areas, Courses, and Credits

General
Earth Science 202, The Earth's Physical Environment, 4 cr.
Earth Science 302, The Geologic Evolution of the Earth, 4 cr.
Earth Science 303, Conservation of Natural Resources, 3 cr.
Earth Science 304, Descriptive Astronomy, 3 cr.
Earth Science 350, Field Geology, 4 cr.

Soils
Earth Science 320, The Soil Environment, 3 or 4 cr.
Earth Science 420, Soil Ecology and Geography, 3 cr.

Water
Earth Science 330, Surface and Ground Water, 3 cr.
Earth Science 331, Elements of Marine Science, 3 cr.
Earth Science 430, Hydrology, 3 cr.
Earth Science 431, Water Pollution, 4 cr.

Minerals and Rocks
Earth Science 340, Minerals, Rocks, and Mineral Resources, 3 cr.
Earth Science 441, Earth Resources I: Minerals, 4 cr.
Earth Science 442, Earth Resources II: Rocks, 4 cr.

Structure and Evolution
Earth Science 310, Paleobiology, 4 cr.
Earth Science 360, Structure of the Earth's Crust, 4 cr.
Earth Science 470, Geomorphology of the Great Lakes Region, 3 cr.

Option in Economics (CCS)

Professor: R. Vlasin; *Associate Professor:* J. Murray (acting chairman); *Assistant Professors:* K. Kangayappan, I. Shariff; *Instructors:* J. Berry, E. Haney, H. Kolshus, V. Kopitzke.

Economics involves the systematic study of the use of resources and the processes involved in production, distribution, and consumption of goods and services in the American and other economic systems. Undergraduate work in economics involves analysis of how the economy has developed, how it is organized, and how it functions. It involves analysis of the components of the economy such as households, businesses and government, as well as the pricing, development, and use of resources, and regional and community development.

Undergraduate training is oriented toward the analysis of contemporary problems and the determination of alternative economic approaches toward resolving those problems. It will prepare students for active roles in business and industry, in governmental agencies, in various educational units and in a host of community organizations.

Courses in economics concentrate in five areas. They are business, industrial, and labor economics, economic theory, international economics, public finance, and resource economics. With the approval of his faculty adviser and the dean of the College of Community Sciences, a student may select 24 credits of 300- and 400-level economics courses, relating them to one of the concentrations. This constitutes an economics option.

The following listing arranges the principal courses in terms of five fields within the discipline of economics. See also the courses listed under the several concentrations and the complete list of economics courses.

Areas, Courses, and Credits

Business, Industrial, and Labor Economics
Economics 302, Money and Banking, 3 cr.
Economics 303, Money, Income, and Prices, 3 cr.
Economics 304, Labor Market and Wage Determination, 3 cr.
Economics 308, Business Cycles, 3 cr.
Economics 309, Introduction to Quantitative Economics,* 3 cr.
Economics 498, Contemporary Problems in Economics, 3 cr.

Economic Theory
Economics 303, Money, Income, and Prices, 3 cr.
Economics 307, Sources of Contemporary Economics Concepts, 3 cr.
Economics 308, Business Cycles, 3 cr.
Economics 309, Introduction to Quantitative Economics,* 3 cr.
Economics 402, Resource Economics Analysis, 3 cr.
Economics 498, Contemporary Problems in Economics, 3 cr.

International Economics

Economics 309, Introduction to Quantitative Economics,* 3 cr.
Economics 403, International Trade, 3 cr.
Economics 404, Economics of Developing Areas, 3 cr.
Economics 405, International Finance, 3 cr.
Economics 498, Contemporary Problems in Economics, 3 cr.

Public Finance

Economics 302, Money and Banking, 3 cr.
Economics 303, Money, Income, and Prices, 3 cr.
Economics 306, Public Finance and Fiscal Policy, 3 cr.
Economics 309, Introduction to Quantitative Economics,* 3 cr.
Economics 405, International Finance, 3 cr.
Economics 498, Contemporary Problems in Economics, 3 cr.

Resource Economics

Economics 303, Money, Income, and Prices, 3 cr.
Economics 305, Natural Resources Economic Policy, 3 cr.
Economics 309, Introduction to Quantitative Economics,* 3 cr.
Economics 402, Resource Economics Analysis, 3 cr.
Economics 404, Economics of Developing Areas, 3 cr.
Economics 498, Contemporary Problems in Economics, 3 cr.

Option in Geography (CCS)

Assistant Professors: K. Ebisch; D. Gandre, L. Gorder, W. Kuepper (acting chairman); *Instructors:* W. Laatsch, D. Last; *Lecturers:* C. Black, J. Herning, J. Rorabacher.

Geography is concerned with the systematic study of the location, variations, and interrelations of the natural and cultural features of the earth. Such study can be applied to the identification and solution of contemporary problems, since the problems of man's life in communities are strongly influenced by the particular features of geographic location. Students choosing a geography option are able to study spatial variations in terms of particular topics, or to consider a number of physical and cultural phenomena within a particular region or regions. Courses in geography concentrate within the four fields of cultural geography, physical geography, regional geography, and urban geography.

Many careers are open to those who choose the geography option: business; government service at the local, state, and national levels; work with private and public agencies; and education.

With the approval of his faculty adviser and the dean of the College of Community Sciences, a student may select 24 credits of 300- and 400-level geography courses, relating them to one of the concentrations. This constitutes a geography option. The following listing arranges the principal courses in terms of four fields within the discipline of geography. See also the courses listed under the several concentrations and the complete list of geography courses.

Areas, Courses, and Credits

Cultural Geography

Geography 202, Introduction to Cultural Geography, 3 cr.
Geography 350, Maps and Air Photos,* 3 cr.
Geography 361, Geography of Africa, 3 cr.
Geography 378, Geography of Tension Areas, 3 cr.
Geography 498, Contemporary Problems in Geography, 3 cr.

Physical Geography

Geography 223, Man and the Oceans of Air, 3 cr.
Geography 320, Landform Geography: Topics and Regions, 3 cr.
Geography 325, Regional Climatology, 3 cr.
Geography 350, Maps and Air Photos,* 3 cr.
Geography 498, Contemporary Problems in Geography, 3 cr.

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*Required of all students choosing the economics option.

Regional Geography
Geography 215, Economic Geography, 3 cr.
Geography 316, Geography of Transportation and Industrial Location, 3 cr.
Geography 350, Maps and Air Photos,* 3 cr.
Geography 361, Geography of Africa, 3 cr.
Geography 371, Geography of the United States and Canada, 3 cr.
Geography 377, Geography of Northern Lands, 3 cr.
Geography 498, Contemporary Problems in Geography, 3 cr.

Urban Geography
Geography 316, Geography of Transportation and Industrial Location, 3 cr.
Geography 342, The City, 3 cr.
Geography 345, Historical Geography of Urban Places, 3 cr.
Geography 350, Maps and Air Photos,* 3 cr
Geography 498, Contemporary Problems in Geography, 3 cr.

Option in History (CCC)

Assistant Professors: P. Abrahams, J. Ivanoff; *Instructors:* H. Cliadakis, D. Galaty, N. Gaworek, R. Johnson, C. Krog, J. McHale.

The history option involves a consideration of important historical dimensions of human experience and expression. Courses in this option focus on the areas of cultural, economic, political, scientific and social history.

Students choosing the history option will find the field a particularly useful preparation for professional school in such fields as law, business, social work, education, and library science.

With the approval of his faculty adviser and the dean of the College of Creative Communication, a student may combine any 24 credits of 300- and 400-level history courses and related courses in the College of Community Sciences into a history option. The following listing arranges courses in terms of the five fields within the discipline of history. The student most often will choose courses from more than one field and relate them to an appropriate concentration.

Areas, Courses, and Credits

Cultural History
Anthropology 203, Understanding Changing Cultures, 3 cr.
History 498, Problems in Historical Causation, 3 cr.
Courses in history of different regions, with special emphasis on cultural history (e.g. American, Asian, European, etc., with no more than 6 credits from any one region) and/or courses in history of language, literature, or art, 12 cr.

Economic History
History 202, Rise of the International Economy, 1400-present, 3 cr.
History 498, Problems in Historical Causation, 3 cr.
Courses in history of different regions, with special emphasis on economic history (e.g. American, Asian, European, etc., with no more than 6 credits from any one region), 12 cr.

Political History
History 498, Problems in Historical Causation, 3 cr.
Political Science 304, Comparative Political Systems, 3 cr.
Courses in history of different regions, with special emphasis on political history (e.g. American, Asian, European, etc., with no more than 6 credits from any one region), 12 cr.

Scientific History
Biology: Ecology 302, Principles of Ecology, 3 cr.
Biology: Ecology 410, Principles of Human Ecology, 3 cr.
History 405, History of Technological Advancement, 3 cr.
History 498, Problems in Historical Causation, 3 cr.

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*Required of all students choosing the geography option.

Human Biology 342, Human Evolution, 3 cr.
Descriptive courses pertaining to the history of science, 6 cr.

Social History

History 498, Problems in Historical Causation, 3 cr.
Sociology 406, Comparative Social Systems, 3 cr.
Courses in history of different regions, with special emphasis on social history (e.g. American, Asian, European, etc., with no more than 6 credits from any one region), 12 cr.

Option in Literature and Language (CCC)

Associate Professors: C. Crandall, E. Havens, A. Matulis, L. Witherell; *Assistant Professors:* T. Daniels, H. Gerend, J. Gerend, W. Herrscher, R. Kersten, L. Locksmith, D. Moews, L. Rudolph, R. Schlueter, E. M. Thron; *Instructors:* J. Belz, W. Dyer, D. Hrubesky, P. Kimmell, M. Murphy, E. Pence, J. Sisk, J. Wahl, D. Webb; *Lecturers:* J. Brickley, S. Heit, S. Hieber, C. Schauman, P. Shortridge, B. Von Hoffman, P. Warrick. D. Webster.

Literature and language involve a consideration of important aspects of culture, stressing unique features as well as general trends. Literature is especially related to the analysis-synthesis concentration, language to the communication-action concentration. There is considerable overlapping, however, between literature and language both in concept and within the courses offered in these fields. On a broader plane, there is considerable connection between literature and the fields of philosophy, history, and the behavioral sciences.

Literature and language are areas of major importance for teacher certification. In addition, the skills and capacities gained through a program in one or more of these areas can be applied in a variety of vocations and professions in business, government service, and journalism. They also are appropriate gateways to certain areas of graduate work.

Courses are listed under the following catagories: English-American literature, literature in translation, literature in other languages, creative use of English, and creative use of other languages. A student may select 24 credits at the 300 and 400 levels from any of these categories or specialize in one or two. A student desiring teacher certification in English would combine English-American literature and creative use of English. A student desiring teacher certification in a foreign language would combine literature in that language and creative use of that language. In any event, a student should relate his option to one of the concentrations. The following list gives examples of courses within the categories.

*Areas, Courses, and Credits**

English-American

English-American 220, Poetry in Context, 3 cr.
English-American 221, Dramaturgy: in Context, 3 cr.
English-American 222, The Novel in Context, 3 cr.
English-American 313, Major English Prose Fiction, 3 cr.
English-American 314, Major English Poetry, 3 cr.
English-American 331, Major American Prose Fiction, 3 cr.
English-American 332, Major American Poetry, 3 cr.
English-American 434, A Major British Writer (or Writers) Exclusive of Shakespeare, 3 cr.
English-American 435, A Major American Writer (or Writers), 3 cr.
English-American 493, English Seminar, 3 cr.
English-American 494, Seminar in American Literature, 3 cr.

Literature in Translation

English-American 104, Introduction to Literary Types, 3 cr.
English-American 106, Great Books, 3 cr.

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*Descriptions of courses in English-American, French, German, and Spanish are listed under Literature and Language in Chapter 4.

English-American 221, Dramaturgy: in Context, 3 cr.
English-American 222, The Novel in Context, 3 cr.
English-American 333, Literary Themes, 3 cr.
English-American 334, Literary Isms, 3 cr.
English-American 335, Literary Eras, 3 cr.

Literature in Other Languages
(French, German, Spanish, etc. French prototype is outlined here.)
French 317, 318, Introduction to French Culture and Civilization, 3, 3 cr.
French 321, Nineteenth Century French Drama and Poetry, 3 cr.
French 322, Nineteenth Century French Novel, 3 cr.
French 402, 403, Contemporary French Literature, 3, 3 cr.
French 496-499, Senior Seminar in French Literature, 1-4 cr.

Creative Use of English
English-American 221, Dramaturgy: in Context, 3 cr.
English-American 223, Approaches to Criticism, 3 cr.
Communication Arts and Sciences 302, 303, Creative Writing, 3, 3 cr.
English-American 310, Dramaturgy: Major English, 3 cr.
English-American 330, Dramaturgy: Major American, 3 cr.
English-American 431, 432, Dramaturgy: Shakespeare, 3, 3 cr.
English-American 493, English Seminar, 3 cr.
English-American 494, Seminar in American Literature, 3 cr.
English-American 496-499, Problems of Literature and Language, 1-4 cr.

Creative Use of Other Languages
Selected advanced speaking and composition courses in the several languages offered.

NOTE: For spoken English, see Communication Arts and Sciences.

Option in Mathematics (CES)

Visiting Professor: G. Petrie; *Associate Professor:* D. Moore; *Assistant Professors:* J. Barger, D. Girard, A. Loomer, E. Robkin, N. Stahl, R. Wenger; *Instructors:* M. Anderson, L. Espenscheid, R. Grosnick, D. Herrick, G. Keepers; *Lecturers:* A. Berquist, W. Harvey, K. Iyengar, D. Komro, J. Landis, C. Leonard, J. Long, F. Miller, G. Miller, N. Nirschl, L. Oswald, M. Regan, W. Reisner, J. Short, J. Sobierski, J. Speth, J. Verdette, H. Wetak.

The mathematics option (24 credits at the 300-, 400-level) is most readily available to the student who has elected to specialize in ecological modeling within the ecosystems analysis concentration. He may already have programmed 18 credits in mathematics offerings at the 300-400 level. Thus only six additional credits applicable to systems ecology are necessary to qualify for the concentration-option.

Students in other concentrations may also wish to elect the mathematics option to prepare for graduate study. For example, the environmental control concentration can be strengthened with courses in advanced calculus, differential equations (both ordinary and partial), and computer science, as well as more specialized offerings such as Heaviside Calculus. Alternatively, various concentrations can be combined with the mathematics option to enable the student to gain additional mastery of concepts and techniques in probability, statistics, analysis, and computer science. Finally, because mathematics is an important form of communication, this option can be meaningfully combined with the concentrations in the College of Creative Communication.

The student electing an option in mathematics must take Mathematics 202, 203, and 211, Calculus and Analytic Geometry I, II, and III, and also should include Mathematics 250, Computer Science I. The 24 credits of 300- and 400-level courses that relate the option to the concentration should include the following:

Courses and Credits
Mathematics 308, Differential Equations and Matrix Algebra, 5 cr.

Mathematics 311, Advanced Calculus, 3 cr.
Mathematics 321, Linear Algebra I, 3 cr.
Mathematics 322, Linear Algebra II, 3 cr.

Additional courses are listed elsewhere in the catalog and should be selected with the assistance of the student's adviser.

For the student in the College of Community Sciences electing the mathematics option, the following are also recommended:

Mathematics 360, Theory of Probability, 3 cr.
Mathematics 361, Theoretical Statistics, 3 cr.

The student electing the mathematics option may select Physics 303, Mechanics, and count this course toward the requirement for the mathematics option.

Options in Performing Arts (CCC)

Professor: P. Mann; *Associate Professors:* A. Cohrs, J. Frisch; *Assistant Professors:* J. Abraham, F. Doverspike, L. Iverson; *Visiting Artist:* O. Kovalenko; *Instructors:* K. Anderson, D. Fennema, L. Foulkes, E. Frame, S. Kovalenko, I. Rogers, D. Semmes, H. Williams; *Lecturers:* R. Bauer, L. Ives.

The performing arts involve an effort at meaningful aesthetic communication between performers and their audiences. Courses in the performing arts emphasize dance, drama, and music.

Students choosing a performing arts option will find that the skills and capacities they gain will prove useful in the pursuit of many different occupations, including elementary and secondary teaching. This option will add also a meaningful dimension to their participation in community endeavors.

The following listing arranges courses in the fields of dance, drama, and music. Students are encouraged to relate one of these art forms to the others, and the whole to one of the concentrations. Twenty-four credits must be selected from these courses.

Dance. It is suggested that the student pursuing the dance option select from the following courses:

Courses and Credits

Performing Arts: Dance 302, Introduction to the Dance, 3 cr.

Performing Arts: Dance 303, Dance History and Techniques, 3 cr.

Performing Arts: Dance 304, 404, Dance Performance **or**

Courses in music, literature, history, and courses in the musical expression of different cultures, 6 cr.

Performing Arts: Dance 496-499, Problems in Performing Arts, 6 cr.

The courses in dance performance are used by the student who seeks experience in performance. In such instances credit is assigned with permission of his tutor, and his preparation for performances may be regarded as seminar-tutorial.

Drama. Because the study of drama leads nowhere if restricted to the printed page, and because drama by its very nature is a "community" art, the core of the drama program at UWGB rests upon an intercurricular theater requirement for the performing arts option in drama. Intercurricular theater is a laboratory course offering variation in theater-participation-training and interdisciplinary study, with possible off-campus and other-culture programs. Its focus can be ecological problem solving within both historical and contemporary contexts of the creation, staging, and meaning of a play and its impact upon its community.

The following courses are particularly appropriate for the performing arts option in drama.

Courses and Credits

Performing Arts: Drama 103, 104, Voice and Movement I, II, 3, 3 cr.

Performing Arts: Drama 107, Theater Techniques I, 3 cr.

Performing Arts: Drama 203, 204, Dramaturgy (Literature-Theater History), 3, 3 cr.

Performing Arts: Drama 311, Dramaturgy (Playwriting), 3 cr.

Performing Arts: Drama 341, Stage Direction, 3 cr.

Performing Arts: Drama 105, 205, 305, 405, Intercurricular Theater **or**

Performing Arts: Drama 496-499, Problems in the Performing Arts, 6 cr.

Music. The study of music is one of the options available to a student in the College of Creative Communication. In keeping with the liberal arts philosophy of the University, the aim of the course of studies in music is to introduce the student to the nature of music as a component of culture and environment and as a means of expression. At the same time, it provides basic technical and theoretical training for those students who may ultimately decide to pursue a career in music.

To allow each student to evolve a program which suits his particular needs, specific requirements for an option in music have been kept to a minimum. For example, a student interested in opera could, in conjunction with the drama department, concentrate on music of the theater. While a great deal of individual freedom is possible, certain courses (analysis, orchestration, etc.), although not actually required for a degree, may be considered vital in a thorough course of study in music. Faculty advisers strongly recommend that the majority of students take these courses.

All entering students are given an examination in basic musicianship, covering musical notation, scale and chord structure and location on the keyboard, and the fundamentals of reading and hearing scales and intervals. Students who do not demonstrate the necessary skills will be required to take Performing Arts: Music 102, Basic Musicianship, during the first semester. Other recommended courses are the following:

Courses and Credits

Performing Arts: Music 110, 111, Music in Perspective, 3, 3 cr.

Course in music literature and history, 3 cr.

Courses in music theory and composition, 6 cr.
Courses in music performance or
Courses in the music expression of different cultures, 6 cr.
Performing Arts: Music 496-499, Problems in the Performing Arts, 6 cr.

Courses in musical performance involve the student's participation in one or more of the musical groups sponsored by the University to help develop his excellence in musical performance. Credit is assigned by the appropriate director. The course also is used for the student who seeks to perform as a soloist. In such instances, credit is assigned with the permission of his tutor, and his preparation for performances may be regarded as a seminar-tutorial.

Students at the University, as well as faculty, are encouraged to participate in the wide range of extracurricular dance, drama, and music activities organized by the faculty responsible for the options in performing arts. These activities constitute an integral part of the University and its community outreach.

Option in Philosophy (CCC)

Associate Professor: F. Kersten; *Assistant Professors:* E. Bottemiller, G. Greif, J. Shier, J. S. Yake; *Lecturer:* D. Winger.

The study of philosophy makes the student aware of the intellectual structure from which he perceives his world and in terms of which he may seek to live in or change his world. It begins with an appreciation of the Socratic dictum, "The unexamined life is not worth living," and moves through the critical analysis of the ideas and ideologies of man to an informal consideration of contemporary challenges to man's values, beliefs, and systems of thought.

Courses in the philosophy option emphasize aesthetics, ethics, metaphysics, philosophy of religion, and social and political philosophy.

Students choosing the philosophy option will find such a discipline useful in the pursuit of many different occupations and a productive dimension of their active participation in community endeavors. This option is also a good preparation for graduate study in areas such as law, journalism, and education.

With the approval of his faculty adviser and the dean of the College of Creative Communication, a student may combine any 24 credits of 300- and 400-level philosophy and coordinate courses into a philosophy option. The following listing arranges courses in terms of the five fields within the field of philosophy. Students most often will choose courses from more than one field and relate them to an appropriate concentration.

Areas, Courses, and Credits

Aesthetics
Course chosen from performing arts (dance, drama, music) or two-dimensional or three-dimensional visual arts, 3 cr.
Philosophy 103, Theories of Valuation, 3 cr.
Philosophy 203, Contemporary Aesthetic Philosophy, 3 cr.
Philosophy 303, History of Modern British and Continental Philosophy, 3 cr.
Philosophy 304, History of American Philosophy, 3 cr.
Philosophy 305, History of Asian Philosophy, 3 cr.
Philosophy 496-499, Contemporary Problems in Philosophy, 1-4 cr.

Ethics
Philosophy 102, Contemporary Moral Philosophy, 3 cr.
Philosophy 202, Ethical Relativism, 3 cr.
Philosophy 205, Freedom, Fate, and Choice, 3 cr.
Philosophy 303, History of Modern British and Continental Philosophy, 3 cr.
Philosophy 304, History of American Philosophy, 3 cr.
Philosophy 305, History of Asian Philosophy, 3 cr.
Philosophy 496-499, Contemporary Problems in Philosophy, 1-4 cr.

Metaphysics
Philosophy 206, Belief, Knowledge, and Truth, 3 cr.
Philosophy 306, Linguistic Analysis, 3 cr.

Philosophy 310, Philosophy of Mind, 3 cr.
Philosophy 303, History of Modern British and Continental Philosophy, 3 cr.
Philosophy 304, History of American Philosophy, 3 cr.
Philosophy 305, History of Asian Philosophy, 3 cr.
Philosophy 496-499, Contemporary Problems in Philosophy, 1-4 cr.

Philosophy of Religion
Anthropology 310, Culture and Personality, 3 cr.
Philosophy 103, Theories of Valuation, 3 cr.
Philosophy 204, Man, Religion, and Society, 3 cr.
Philosophy 303, History of Modern British and Continental Philosophy, 3 cr.
Philosophy 304, History of American Philosophy, 3 cr.
Philosophy 305, History of Asian Philosophy, 3 cr.
Philosophy 496-499, Contemporary Problems in Philosophy, 1-4 cr.

Social and Political Philosophy
Philosophy 205, Freedom, Fate, and Choice, 3 cr.
Philosophy 303, History of Modern British and Continental Philosophy, 3 cr.
Philosophy 304, History of American Philosophy, 3 cr.
Philosophy 305, History of Asian Philosophy, 3 cr.
Philosophy 496-499, Contemporary Problems in Philosophy, 1-4 cr.
Political Science 307, Concepts in Political Theory, 3 cr.
Sociology 306, 307, Concepts of Social Analysis, 3, 3 cr.

Option in Physics (CES)

Assistant Professors: L. Corrado, F. Fischbach, N. Petrakopoulos, C. Rhyner, V. Sharma; *Instructors:* A. Dickison, W. Shufeldt.

Physics, a science of measurement, experimentation, and systematization of the results of experiments, has played a fundamental role in much basic and applied scientific development. It is central to the related disciplines of engineering, chemistry, and applied mathematics and forms an essential complement to the earth sciences and biology. The student electing an option in physics must take:

Chemistry-Physics 110, 211, 212, Chemistry-Physics
Mathematics 202, 203, Calculus and Analytic Geometry I, II

He may also choose 18 credits from the following electives:

Courses and Credits
Chemistry-Physics 320, Thermodynamics and Kinetic Theory, 3 cr.
Earth Science 430, Hydrology, 3 cr.
Environmental Sciences 351, Climatology, 3 cr.
Environmental Sciences 430, Community Air Pollution, 3 cr.
Environmental Sciences 431, Air Pollution Control, 3 cr.
Physics 302, Electromagnetic Radiation, 4 cr.
Physics 303, Mechanics, 3 cr.
Physics 304, Electricity and Magnetism, 4 cr.
Physics 305, Electronic Aids to Measurement, 4 cr.
Physics 306, Biophysics, 3 cr.
Physics 310, Modern Physics I (Atomic), 3 cr.
Physics 311, Advanced Laboratory Physics, 2 cr.
Physics 312, Modern Physics II (Nuclear), 3 cr.
Physics 313, Advanced Laboratory Physics, 2 cr.
Physics 340, Fluid Mechanics, 3 cr.
Physics 350, Meteorology, 3 cr.
Physics 440, Soil Physics, 3 cr.
Physics 450, Air Pollution Meteorology, 3 cr.

Courses such as these will play a fundamental role in educating the student to deal professionally with the problems of environmental pollution and control.

Political Science

Option in Political Science (CCS)

Professor: E. Weidner; *Visiting Professor:* N. Dang; *Associate Professor:* R. Fontera (acting chairman); *Assistant Professors:* F. Armstrong, M. Greenberg, J. Kolka, R. Langlois, E. Swinerton; *Instructors:* J. Aaronson, C. J. Yarbrough; *Lecturer:* A. Zander.

Political science involves the systematic study of political structures, processes, functions, and policies within particular political systems or within the framework of international relations. Undergraduate work in political science involves institutional, behavioral, and philosophical analysis and may focus on particular systems or stress comparative studies. Like the other community sciences, political science is oriented to problems and their solutions and seeks to prepare the student either for an active role in administration and government, or for the equally significant role of a well-informed participant in the political process. Courses in political science concentrate within the five fields of American political behavior, comparative politics, international politics, political analysis, and public administration.

Career opportunities in wide variety are open to students who choose the political science option. These include city management; foreign service; teaching; specialized overseas assignments; work with private and public agencies; and employment with the public services at the city, state, national, and international levels.

With the approval of his faculty adviser and the dean of the College of Community Sciences, a student may select 24 credits of 300- and 400-level political science courses, relating them to one of the concentrations. This constitutes a political science option. The following listing arranges the principal courses in terms of five fields within the discipline of political science. See also courses listed under the several concentrations and the complete list of political science courses.

Areas, Courses, and Credits

American Political Behavior

Political Science 302, Community Political Behavior, 3 cr.

Political Science 303, Elections and Voting Behavior, 3 cr.

Political Science 426, American Legislative Process, 3 cr.

Political Science 472, Parties and Pressure Groups, 3 cr.

Political Science 498, Contemporary Problems in Political Science, 3 cr.

Comparative Politics

Political Science 302, Community Political Behavior, 3 cr.

Political Science 304, Comparative Political Systems, 3 cr.

Political Science 305, Political Systems of the Commonwealth, 3 cr.

Political Science 402, Political Values and Ideologies, 3 cr.

Political Science 498, Contemporary Problems in Political Science, 3 cr.

International Politics

Political Science 304, Comparative Political Systems, 3 cr.

Political Science 306, International Political Systems and Processes, 3 cr.

Political Science 403, Foundations and Problems of International Politics, 3 cr.

Political Science 404, American Foreign Economic and Military Policies, 3 cr.

Political Science 498, Contemporary Problems in Political Science, 3 cr.

Political Analysis

Political Science 303, Elections and Voting Behavior, 3 cr.

Political Science 307, Concepts in Political Theory, 3 cr.

Political Science 402, Political Values and Ideologies, 3 cr.

Political Science 498, Contemporary Problems in Political Science, 3 cr.

Public Administration

Administration: Organization and Operations 302, Principles of Organization and Operation, 3 cr.
Political Science 320, Practice of Public Administration, 3 cr.
Political Science 321, Politics of Bureaucratic Responsibility, 3 cr.
Political Science 405, American Executive Behavior, 3 cr.
Political Science 498, Contemporary Problems in Political Science, 3 cr.

Option in Psychology (CCS)

Professors: E. Hartley, I. Korner; *Associate Professor:* N. Pollis; *Assistant Professors:* S. Cannizzo, D. Makuen, L. Nesberg (acting chairman); *Instructor:* E. Knowles; *Lecturer:* B. Baker.

Psychology involves the scientific and systematic study of human behavior, as well as the behavior of animals. Psychology relates such behavior to both physiological and environmental conditions. As a community science, psychology places a strong emphasis on human relations and the adjustment of the individual to society, focusing on the understanding, predicting, and influencing of social behavior. Patterns of behavior in animals are examined for the light they can shed on human behavior. Courses in psychology concentrate within the three fields of industrial psychology, psychological theory, and social psychology.

Many different career opportunities are open to students who choose the psychology option. Business organizations, private and public agencies, and educational institutions seek people with strong preparation in the discipline of psychology.

With the approval of his faculty adviser and the dean of the College of Community Sciences, a student may select 24 credits of 300- and 400-level psychology courses, relating them to one of the concentrations. This constitutes a psychology option. The following listing arranges the principal courses in terms of three fields within the discipline of psychology. For developmental psychology, see the courses listed under Growth and Development in Chapter 4.

Areas, Courses, and Credits

Industrial Psychology

Psychology 314, Industrial Psychology, 3 cr.
Psychology 320, Personnel Psychology, 3 cr.
Psychology 415, Organization Psychology, 3 cr.
Psychology 416, Psychology of Intergroup Relations, 3 cr.
Psychology 498, Contemporary Problems in Psychology, 3 cr.

Psychological Theory

Psychology 306, Psychology of Perception, 3 cr.
Psychology 309, Psychology of Motivation, 3 cr.
Psychology 338, Psychology of Learning, 3 cr.
Psychology 417, Thinking and Problem Solving, 3 cr.
Psychology 498, Contemporary Problems in Psychology, 3 cr.

Social Psychology

Psychology 335, Psychology of Attitudes and Public Opinion, 3 cr.
Psychology 337, Social Behavior Dynamics, 3 cr.
Psychology 416, Psychology of Intergroup Relations, 3 cr.
Psychology 438, Group Dynamics, 3 cr.
Psychology 498, Contemporary Problems in Psychology, 3 cr.

Option in Public Administration (SPS)

Professor: R. Posey.
Visiting Professors: N. Dang, G. Petrie.
Visiting Associate Professor: H. Jadwani.
Assistant Professors: R. Jiobu, D. Ward.
Lecturers: J. Artzberger, F. Garrow, L. Karman, J. Kenny, B. Larsen, W. Parsons, G. Ravet, F. Waedt, V. Waggoner, A. Zander.

The student who selects the option in public administration is introduced to the problems and techniques involved in working in groups and attaining group goals. His professional focus leads him to the degree of Bachelor of Science

(Administration). As a sophomore or junior he is required to take the following two-course sequence:

Organization and Operations 202, Business and Its Environment
Organization and Operations 203, Government and Business

He must also select six credits each in any four of the following fields, plus six additional credits in whichever of the four administration fields is his principal interest: distribution, finance, labor relations, organization and operations, and quantitative methods. Courses that are particularly appropriate for the option in public administration are:

*Courses and Credits**
Distribution 302, Principles of Distribution, 3 cr.
Distribution 305, Theory and Practice in Public Relations, 3 cr.
Distribution 310, Transportation and Purchasing, 3 cr.
Distribution 410, Applied Motivational Research, 3 cr.
Finance 304, Public Finance and Fiscal Policy, 3 cr.
Finance 402, Problems of Investment, 3 cr.
Finance 403, Financial Planning and Control, 3 cr.
Labor Relations 303, Personnel Administration in Government, 3 cr.
Labor Relations 310, Labor Unions in America, 3 cr.
Labor Relations 312, Collective Bargaining, 3 cr.
Labor Relations 402, Problems in Labor Relations, 3 cr.
Labor Relations 403, Labor Legislation and Administration, 3 cr.
Labor Relations 412, Cases in Collective Bargaining, 3 cr.
Labor Relations 420, International Labor Relations, 3 cr.
Organization and Operations 302, Principles of Organization and Operation, 3 cr.
Organization and Operations 320, Practice of Public Administration, 3 cr.
Organization and Operations 402, Planning, Control, and Routinization, 3 cr.
Quantitative Methods 204, Introductory Accounting, 3 cr.
Quantitative Methods 205, Intermediate Accounting, 3 cr.
Quantitative Methods 206, Accounting for Administrators, 3 cr.
Quantitative Methods 230, Quantitative Methods in Administration, 3 cr.
Quantitative Methods 302, Cost Accounting, 3 cr.
Quantitative Methods 303, 304, Financial Accounting, Theory, and Practice I, II, 3, 3 cr.
Quantitative Methods 310, Governmental and Institutional Accounting, 3 cr.
Quantitative Methods 403, Auditing Standards and Procedures I, 3 cr.

The student in public administration must select at least 24 credits from the economics and political science options. In some cases, it may be more desirable for the student to forego these options and fulfill completely one of the three concentrations in the College of Community Sciences: modernization processes, regional analysis, or urban analysis. The public administration student who intends to become a hospital administrator might well consider a field in human biology. The student who plans a career in the administration of social services might pick the option in sociology. While it is obvious that the program is flexible, it is important that the student's plans be relevant to his interests, and in building such a program, he should work closely with his faculty adviser.

Option in Sociology (CCS)

Assistant Professors: R. Jiobu, C. Pollis; *Instructors:* J. Gould, L. Smith.

Sociology is concerned with the systematic study of social patterns of human relationships, their origins and consequences. Within the framework of the community sciences, sociology is oriented toward the study of interpersonal relations, the institutional and functional framework of social organizations and the components of personality determined by group membership. The emphasis in sociology is on the working relationships between basic concepts, theory, and research. Courses in sociology concentrate within the four fields of demography, deviant behavior, social organization, and social theory.

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*Course descriptions are listed under Administration in Chapter 4.

Many careers are open to those who choose the sociology option: law, social work, industrial relations, the ministry, education, and journalism.

With the approval of his faculty adviser and the dean of the College of Community Sciences, a student may select 24 credits of 300- and 400-level sociology courses, relating them to one of the concentrations. This constitutes a sociology option. The following listing arranges courses in terms of four fields within the discipline of sociology. See also courses listed under the several concentrations and the complete list of sociology courses.

Areas, Courses, and Credits

Demography
Sociology 302, Social Stratification, 3 cr.
Sociology 303, Theories of Societal Development and Change, 3 cr.
Sociology 402, World Populations, 3 cr.
Sociology 403, Demographic Characteristics of the Upper Great Lakes Region, 3 cr.
Sociology 498, Contemporary Problems in Sociology, 3 cr.

Deviant Behavior
Sociology 304, 305, Processes of Deviant Behavior, 3, 3 cr.
Sociology 404, Criminology, 3 cr.
Sociology 446, Juvenile Delinquency, 3 cr.
Sociology 498, Contemporary Problems in Sociology, 3 cr.

Social Organization
Sociology 302, Social Stratification, 3 cr.
Sociology 308, Marriage and Family, 3 cr.
Sociology 405, Rural-Urban Interaction, 3 cr.
Sociology 407, Complex Organization, 3 cr.
Sociology 498, Contemporary Problems in Sociology, 3 cr.

Social Theory
Sociology 303, Theories of Societal Development and Change, 3 cr.
Sociology 306, 307, Concepts of Social Analysis, 3, 3 cr.
Sociology 406, Comparative Social Systems, 3 cr.
Sociology 498, Contemporary Problems in Sociology, 3 cr.

Option in Visual Arts (CCC)

Associate Professors: M. Kazar, W. King, W. Prevetti; *Assistant Professors:* R. Fritz, A. Imber, J. LaMalfa, R. Pum, R. Ray, W. Simpson, T. Tasch, R. Wengatz, R. Williams; *Visiting Artist:* J. Henry.

Man is an image and form maker. From the images on the cave walls of paleolithic man, a record of the visual arts has continued to our own time, and although the motivation for these images appears to change from era to era, there is ample evidence to affirm the need of men to transfer their experiences into visual symbols.

The visual arts involve an effort at meaningful aesthetic communication between the creator and the spectator. Courses in the visual arts include emphasis upon two-dimensional and three-dimensional forms.

Students choosing the visual arts option will find that the skills and capacities they gain will prove to be useful in the pursuit of many different occupations. This option will also add a meaningful dimension to their participation in community endeavors.

A student selecting a visual arts option chooses 24 credits at the junior and senior level from the following courses, in consultation with his adviser.

Visual Arts

Areas, Courses, and Credits

Two-Dimensional Art

Visual Arts 102, 103, Design and Drawing Studio I, II, 3, 3 cr.

Courses in painting and graphics, 9 cr.

Visual Arts 496-499, Problems in Visual Expression, 1-4 cr.

Three-Dimensional Art

Visual Arts 102, 103, Design and Drawing Studio I, II, 3, 3 cr.

Visual Arts 104, Advanced Design and Drawing Studio, 3 cr.

Visual Arts, 409, Materials Workshop for the Designer, 3 cr.

Visual Arts 480, 481, Introduction to Environmental Design **and/or**

Visual Arts 321, 322, Sculpture, **and/or**

Visual Arts 331, 332, Ceramics, 9 cr.

Visual Arts 496-499, Problems in Visual Expression, 1-4 cr.

Students at the University, as well as the faculty, are encouraged to participate in the wide range of extracurricular two-dimensional and three-dimensional activities organized by the faculty responsible for this option. These activities constitute an integral part of the community outreach of the University.

Professional Application

A student at The University of Wisconsin–Green Bay who chooses to emphasize professional application of his concentration or option may do so in one of two ways: a collateral or a preprofessional program.

COLLATERALS (OR PROFESSIONAL MINORS)

While each of the concentrations and options described in this catalog has direct professional applications to job relevance or to a professional school experience, there are several special applications that require some additional particular competence. To meet this need, a student may select a professional collateral or minor in the School of Professional Studies which supplements his liberal arts major and provides him with a professional-specialist orientation. Professional collateral courses are offered in business and public administration, education (leading to teacher certification at the preschool, elementary, and secondary levels), leisure sciences, mass communications, and social services. Eighteen hours are required for a professional collateral except in elementary education where, by state law, 27 credits are required. The student interested in pursuing a collateral should consult his concentration or concentration-option adviser about these cooperative programs with the School of Professional Studies.

The Collateral in Business Administration

A student may take a professional collateral (minor) in business administration by selecting 18 appropriate credits from the work offered in administration. The 18 credits should conform to the basic guidelines described in the option in business administration, page 55.

The Collateral in Education—Teacher Certification

Professor: R. Hartley.
Associate Professor: G. O'Hearn (chairman).
Assistant Professors: D. Bryan, J. Busch, T. Christie, F. Evans, A. Imber, R. Pum, T. Van Koevering.
Instructors: R. Belisle, W. Gingold.

To secure a license to teach in the schools of the state of Wisconsin, one must have a bachelor's degree and have completed a program of instruction approved by the State Department of Public Instruction. The University of Wisconsin–Green Bay offers programs leading to:

1. Elementary school certification, early childhood education, kindergarten and elementary grades 1-6.

2. Specialist certificates in art K-12 or music K-12.

3. Secondary school certification in areas including:
Biology
Chemistry
Communication Arts and Sciences
Earth Science
Literature and Language: English-American
Literature and Language: French, German, Spanish
Geography
History
Mathematics
Music
Physics
Science—broad field
Social Studies—broad field
Visual Arts

A student who completes one of these programs and who fulfills the general degree requirements of The University of Wisconsin–Green Bay will be licensed for a three-year term. A permanent license follows after three years of successful teaching experience.

Admission to the Teacher Certification Program. Teacher certification is carried on cooperatively by each theme college and the School of Professional Studies. The student pursues work on his chosen environmental problem within a theme college while also completing the collateral work in professional education in the School of Professional Studies. When the student decides to enter the teacher certification program, he should complete Form SPS-E1, registration for teacher licensing programs, and should indicate this dual classification at semester registration. A student seeking teaching certification selects a concentration or concentration-option and is assigned an adviser accordingly. In addition, he is guided by the Division of Education in selecting courses to meet the certification requirements.

Secondary School License. For a secondary school license, the student must complete an approved program for that which the State Department of Public Instruction terms a *teaching* major, or a major and a minor, or two majors, or a broad field major. A *teaching* major is different from a concentration or concentration-option major. The teaching major in a discipline is completed via an option of 34 credits (total including freshman and sophomore work) taken in conjunction with an appropriate 12-credit concentration. Minors and broad field majors are completed via certain concentrations, depending upon the fields involved. The option a student selects to meet teaching certification requirements includes a balance of introductory, intermediate, and advanced courses. In all cases the student will pursue advanced work with an environmental focus in a concentration. The student may consult with a faculty adviser in the Division of Education to obtain a detailed description of specific teaching options and programs.

Professional Education Requirements. In addition to the general requirements listed above, the following professional education requirements, totalling 18 credits, must be completed.

1. Eight credits in practice teaching at the secondary level in the major teaching area.

2. One of the following three-credit courses:
Psychology 338, Psychology of Learning
Growth and Development 332, Middle Childhood and Adolescence

3. At least one methods course in the appropriate teaching area, selected from the following list:
Education 310, Teaching Methods in English, 3 cr.
Education 311, Teaching Methods in Foreign Language, 3 cr.
Education 312, Teaching Methods in the Social Studies, 3 cr.
Education 313, Teaching Methods in Mathematics, 3 cr.
Education 314, Teaching Methods in the Sciences, 3 cr.
Education 316, Teaching Methods in Art, 2 cr.
Education 317, Teaching Methods in Music, 2 cr.
For the student who desires to be licensed in both a major and a minor, in two majors, or in a broad field major, it is recommended that two of the above teaching methods courses be taken, rather than one.

4. Additional credits in electives relevant to education, such as courses in sociology, history, or philosophy that deal with various aspects of education, or any of the following:
Education 404, Creative Learning in the Elementary School, 3 cr.
Education 405, Individualizing Instruction, 3 cr.
Education 406, Evaluation Systems, 3 cr.
Education 407, Instructional Management, 3 cr.
Education 408, Instructional Planning, 3 cr.
Education 489, Research Design, 3 cr.
Education 496-499, Special Readings in Professional Education, 1-4 cr.

Statutory Requirements. Wisconsin Statutes 118.19 (6) require that "in granting certificates for the teaching of courses in economics, social studies, and agriculture, adequate instruction in cooperative marketing and consumers' cooperatives shall be required. In granting certificates for the teaching of courses in science and social studies, adequate instruction in the conservation of natural resources shall be required." Cooperative marketing and consumers' cooperatives are included in Economics 102, Economics in the Modern World. The conservation of natural resources is included in Earth Science 303, Conservation of Natural Resources, or in Economics 305, Natural Resources Economic Policy.

Elementary School License. For an elementary school license the student normally selects an appropriate concentration which contains course work relevant to elementary school teaching. The student must acquire subject matter proficiency in social studies, art, science, mathematics, and music, as well as proficiency in English. The student should consult with the Division of Education for information and requirements specific to programs in pre-school, kindergarten, and elementary education, in addition to working with the regular adviser assigned by his concentration. Because of its interdisciplinary nature, a concentration is more appropriate for students seeking elementary school licensing than a concentration-option.

The following program of courses, providing a total of 27 credits, is designed to meet the professional education requirements of the Wisconsin state code for elementary certification:

1. Eight credits of practice teaching at the elementary school level.

2. One of the following three-credit courses:
Psychology 338, Psychology of Learning
Growth and Development 331, Infancy and Early Childhood

3. All of the following courses:
Education 302, Elementary School Teaching Methods in Social Studies, 3 cr.
Education 303, Elementary School Teaching Methods in Art, 2 cr.
Education 304, Elementary School Teaching Methods in Music, 2 cr.
Education 305, Elementary School Teaching Methods in Mathematics and Science, 4 cr.
Education 306, Elementary School Teaching Methods in Physical Education, 2 cr.
Education 307, The Teaching of Reading, 3 cr.

Practice Teaching. Practice teaching is customarily taken in the student's senior year. An application form for practice teaching (SPS-E2) must be turned in to the Supervisor of Practice Teaching before the end of the student's junior year.

Practice teaching is perhaps the most crucial element in the entire teacher preparation program, and should not be undertaken as a part-time activity. The student must plan his academic program so as to allow at least one-half a semester for the practice teaching. The University of Wisconsin–Green Bay does not consider the five-credit minimum practice teaching requirement of the state to be enough for adequate practice teaching experience, and therefore requires eight credits of practice teaching.

The Collateral in Leisure Sciences*

Professor: E. Storey.
Assistant Professors: R. Ditton, T. Goodale.

This curriculum provides education for the leisure service professions including management, supervisory, and leadership positions in public park and recreation systems, private agencies, commercial recreation enterprises, resource planning agencies and firms, therapeutic recreation in medical and para-medical settings, and special services in the armed forces. Courses required to fulfill the collateral are:

Courses and Credits
Leisure Sciences 302, Philosophy and Sociology of Leisure, 3 cr.

*This collateral will be offered when it is approved by the Coordinating Council for Higher Education.

Leisure Sciences 303, Physiology and Psychology of Recreation, 3 cr.
Leisure Sciences 320, Field Practicum, 2 cr.

In consultation with his faculty adviser, the student also chooses six credits from the following:

Leisure Sciences 310, Formulating and Administering Recreation Programs, 3 cr.
Leisure Sciences 403, Recreation Supply and Demand Analysis, 3 cr.
Leisure Sciences 404, Public Park and Recreation Systems, 3 cr.
Leisure Sciences 410, Recreation Resource Planning in the Upper Great Lakes Region, 3 cr.

As a part of a student's concentration or concentration-option, it is suggested that he select at least two courses from the following:

Administration: Organization and Operations 310, Small Business Management in the Northern Great Lakes Region, 3 cr.
Administration: Organization and Operations 320, Practice of Public Administration, 3 cr.
Administration: Distribution 410, Applied Motivational Research, 3 cr.
Political Science 204, Comparative Bureaucratic Behavior, 3 cr.
Psychology 202, Introduction to Social Psychology, 3 cr.

The Collateral in Mass Communications*

Assistant Professor: D. O'Brien.
Lecturers: J. Bowman, D. Otto, M. Reed.

This field of study is concerned with the application of communications skills and insights to the mass communications media: newspapers, magazines, radio, and television. In consultation with his adviser, the student chooses 12 credits from among the courses in Mass Communications, and six credits selected from the following:

Courses and Credits
Administration: Distribution 305, Theory and Practice in Public Relations, 3 cr.
Administration: Distribution 403, Principles of Advertising, 3 cr.
Administration: Distribution 410, Applied Motivational Research, 3 cr.
Administration: Organization and Operations 490, Problems of Business Management, 3 cr.
Psychology 202, Introduction to Social Psychology, 3 cr.

The Collateral in Public Administration

A student may take a professional collateral (minor) in public administration by selecting 18 appropriate credits from the work in administration. The 18 credits should conform to the basic guidelines in the option in public administration, page 69.

The Collateral in Social Services

Fulfilling this collateral prepares the student for beginning professional social work in public and private agencies where the Master of Social Work degree is not required. The student, in consultation with his faculty adviser, chooses from among the following courses:

Courses and Credits

Three of the following five:

Social Services 202, Introduction to Social Work, 3 cr.
Social Services 203, Social Welfare Programs of the National, State, and Local Government, 3 cr.
Social Services 310, Child Welfare, 3 cr.
Social Services 405, Probation and Parole, 3 cr.
Social Services 410, Social Programs and the Aged, 3 cr.

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*This collateral will be offered when it is approved by the Coordinating Council for Higher Education.

Two of the following four:

Administration: Organization and Operations 320, Practice of Public Administration, 3 cr.
Sociology 203, Problems of American Minority Groups, 3 cr.
Sociology 302, Social Stratification, 3 cr.
Social Services 302, Methods of Public Welfare Investigation, 3 cr.

The following course is required to complete the collateral:

Social Services 402, Field Experience in a Social Service Agency, 3 cr.

PREPROFESSIONAL PROGRAMS

Three kinds of preprofessional opportunities exist. First, regular majors and minors leading to a bachelor's degree offer appropriate preparation for most graduate professional schools such as law, medicine, dentistry, social work and music. Second, for students desiring a four-year bachelor's degree in engineering, nursing, or certain other applied fields, UWGB offers a special two-year preprofessional program. Third, students desiring both a liberal and a technical bachelor's degree can select a 3-2 plan leading to both a bachelor of arts (or science) degree at UWGB and a bachelor of nursing or engineering (or another applied field) at another institution. Three years are spent at UWGB, two at the other institution. The student interested in pursuing a preprofessional program should consult his concentration or concentration-option adviser or the advisers of the Office of the Director of Student Affairs.

Agricultural Science

The University of Wisconsin–Green Bay provides the prospective student in agricultural science with an opportunity to obtain a basic and uniquely appropriate background for entry into the agricultural profession. The student who desires a degree in agriculture would ordinarily take two years of his program at UWGB, transferring at the beginning of the junior year to a school or college of agriculture. In the freshman and sophomore years, such a student is advised to register for courses in biology, nutritional science, introduction to environmental sciences, earth science, ecology, and chemistry-physics.

A strong high school background in science is recommended. In addition, the student should obtain a copy of the catalog of the agricultural college he intends to enter, and be guided by its recommendations for his freshman and sophomore studies.

Architecture

Instruction in architecture is tending more and more to be offered only at the graduate level. Preparation for entering architectural school should be guided mainly by the requirements and recommendations for entry set forth in the catalog of the architectural school of the student's choice. Nevertheless it may be pointed out that architecture combines the study of sciences, mathematics, and art. Thus the student who obtains his bachelor's degree from UWGB before entering a school of architecture should work out with his adviser a program that will

meet the admission requirements of the architectural school, and that will include work in the College of Environmental Sciences and the College of Creative Communication, the former in chemistry, mathematics, and physics, and the latter, in the visual arts. A proper combination of concentrations and options is easily worked out with the student's adviser.

City Planning and Community Development
Graduate professional instruction in city planning and community development is available at many universities in the United States. The student is advised to obtain a catalog describing graduate work in the field in the institution of his choice, and be guided primarily by its requirements and recommendations. The degree requirements of UWGB are flexible enough that the student, in consultation with his adviser, may construct a program of concentration, option, and professional collateral that will be suitable preparation for graduate study. Actually, individuals enter city planning from a wide range of educational backgrounds. Because the range of subject matter and desirable skills in this profession is so broad, no individual can be expected to master them all, particularly in his undergraduate program. Nevertheless the student is advised to consider carefully the concentration in urban analysis in the College of Community Sciences, options in economics and political science, and the professional collateral in public administration.

Engineering
The University of Wisconsin–Green Bay provides the prospective engineering student with an opportunity to obtain a fundamental background for entry into the engineering profession. With the various combinations of theme college concentrations and options available, the student may obtain background preparation, for example, in administration, natural sciences, communications, economics, or environmental sciences. The College of Environmental Sciences provides an integrated basic training in related areas of mathematics, chemistry-physics, and engineering.

The student may follow either of two programs if he plans to transfer to a college of engineering:

1. Under the 2-2 plan he spends two years at UWGB and two years at an engineering school. Upon graduation he receives a bachelor of science degree from the college of engineering.

2. Under the 3-2 plan he spends three years at UWGB and two years at the college of engineering. Upon graduation he receives bachelor of science degrees from both UWGB and the engineering school. Courses accredited by the College of Engineering at The University of Wisconsin–Madison and The University of Wisconsin-Milwaukee are available at UWGB in the College of Environmental Sciences.

A student should select the engineering school he plans to attend as early as possible. Then, in consultation with his adviser, he should adjust his program to meet the transfer requirements for the engineering field of his choice. A strong high school background in mathematics and physics is essential. The following courses are recommended for pre-engineering and should be completed by the end of the sophomore year:

Liberal Education Seminar 101, 102, 215, 216
Chemistry-Physics 110, 211, 212, Chemistry-Physics
Mathematics 202, 203, Calculus and Analytic Geometry I and II
Mathematics 308, Differential Equations and Matrix Algebra
Mathematics 250, Computer Science I

Need for the following courses depends upon the choice of engineering school and field of engineering:

Engineering 102, Elements of Descriptive Geometry
Engineering 113, General Engineering Graphics
Engineering 302, Engineering Mechanics: Statics
Engineering 303, Engineering Mechanics: Dynamics
Modern foreign language

Students studying under the 3-2 plan must take Liberal Education Seminar 315, 316. Among the courses that might be elected by pre-engineering students, the following are suggested:

Chemistry 313, Analytical Chemistry
Chemistry 315, Nuclear and Radiochemistry
Chemistry 321, Physical Chemistry
Chemistry-Physics 320, Thermodynamics and Kinetic Theory
Earth Science 320, The Soil Environment
Earth Science 330, Surface and Ground Water
Earth Science 430, Hydrology
Mathematics: 300-level courses appropriate to the field of engineering
Physics 304, Electricity and Magnetism
Physics 305, Electronic Aids to Measurement
Physics 340, Fluid Mechanics

Health Professions

Medicine. Although colleges of medicine differ in their specific entrance requirements, all of them emphasize the importance of exceptional ability, high aptitude in science, and outstanding achievement in premedical college education. A student who plans to apply for admission to a particular college of medicine should familiarize himself with the requirements of that college and make certain that the courses for which he registers will meet those requirements.

The minimum requirement for admission to colleges of medicine is 90 credits of college work in institutions approved by professional accrediting associations. However, almost all the leading medical schools require completion of a bachelor's degree.

All medical colleges specify minimum requirements in certain subjects. The following table of minimal requirements is representative, although not applicable in every case.

Courses and Credits
Inorganic chemistry, 12 cr.
Organic chemistry, 8 cr.
Physics, 8 cr.
Zoology (biology), 12 cr.
English, 6 cr.
Modern foreign language, 16 cr.

Physical chemistry and mathematics through calculus provide a useful background and allow a better understanding of the basic concepts of human biology. Therefore, these subjects are recommended to those students who can fit them into their college experience.

In addition to evidence of academic competence, other qualifications for admission will be considered. Special attention will be given to letters from college professors, premedical committees, and impressions gained from a personal interview. It is important to point out that completion of a bachelor's degree is desirable and almost essential in order to meet the competition presented by the better-qualified applicants. Students who major in the humanities are given equal consideration with those who major in the sciences providing they show better than average ability to cope with scientific material.

Applicants are almost always required to take the Medical College Admissions Test. The test must be taken not later than the October preceding the desired year of admission.

Students should consult the premedical and predental committee regarding the formulation of their programs. Frederick Sargent II, M.D., dean of the UWGB College of Environmental Sciences, is chairman.

Premedical course requirements for The University of Wisconsin Medical School are the following:

1. Chemistry (minimum of 4 semesters)
   a. General, including qualitative analysis: year course
   b. Organic, including aliphatic and aromatic compounds with laboratory work: semester course
   c. Quantitative: semester course. Any other chemistry course with laboratory work may be substituted for quantitative analysis, provided that the student's chemistry pro-

gram includes adequate experience in quantitative concepts and techniques.

2. Physics: year course
3. Zoology
   a. General: semester course
   b. Developmental biology: semester course
4. College mathematics: semester course

College level courses taken in high school or preparatory school may be accepted as satisfying requirements, if the college transcript clearly indicates that the college allows credit for such courses toward fulfillment of requirements for the bachelor's degree.

The value of a four-year college program rather than a three-year program is recognized and the admissions committee will give preference to applicants planning to graduate from college. However, an undergraduate wishing to enter the Medical School after the third year should see The University of Wisconsin–Madison catalog, part 1, or consult the premedical committee.

Dentistry. The minimum requirement for admission to colleges of dentistry is 60 credits of college work in institutions approved by professional accrediting associations. Almost all the leading dental colleges, however, require completion of a minimum of 90 credits. All dental colleges specify minimum requirements in certain subjects. The following table is representative.

Courses and Credits
Liberal Education Seminar or English, 6 cr.
Biology, 8 cr.
Chemistry-physics, 10 cr.
Advanced courses in chemistry, 6 cr.

In many cases, the student is advised to take more than the minimum amount of work in the subjects represented in the prerequisite sciences.

From the available evidence it would appear that the emphasis in the choice of electives should be on those subjects which will afford the student the broadest possible background. Subjects recommended for consideration of elective courses include drawing, economics, English literature and language, government, history, mathematics, philosophy, psychology, sociology, statistics, zoology, and additional courses in physics and in chemistry.

In any case, the student should examine the catalog of the dental school to which he plans to seek admission, and with his adviser, formulate his program of courses accordingly.

Nursing. For the student who desires to prepare for a professional career in nursing or nursing science, a choice may be made among three different programs. The first, conducted in collaboration with the Bellin Memorial Hospital School of Nursing, leads to the R.N. diploma. The other two, conducted in collaboration with the Schools of Nursing at the Madison and Milwaukee campuses of The University of Wisconsin, lead to th B.S. degree in nursing and certification for the R.N.

1. The Diploma Program at Bellin Memorial Hospital School of Nursing. In cooperation with UWGB, the Bellin Memorial Hospital School of Nursing in Green Bay offers a program leading to a diploma in nursing and prepares the student for certification as a registered nurse. Interested students must apply both to the hospital and to UWGB.

The first two years are spent primarily at the UWGB campus, followed by one year at the Bellin Memorial Hospital School of Nursing. The following courses or their equivalents are required:

Courses and Credits
Liberal Education Seminar, 6 cr.
General chemistry, 5 cr.
Biology, 18 cr.
Sociology, 3 cr.
Psychology, 3 cr.

To participate in this program, the student must be admitted to the Bellin School of Nursing and to the University. Separate application blanks are required by the hospital nursing school and the University. For further information, write to the Director of the Bellin Memorial Hospital School of Nursing, 733 South Webster Avenue, Green Bay, Wisconsin 54301.

2. The Baccalaureate Programs at UWMsn and UWM (2-2 Plan). The School of Nursing of The University of Wisconsin–Madison and the School of Nursing of The University of Wisconsin–Milwaukee offer programs in nursing. Both programs lead to the Bachelor of Science degree in nursing and prepare the high school graduate with no previous experience in nursing for registration as a professional nurse. Each program is four years and two summer sessions in length. One or two years may be taken at UWGB; the remainder is offered at the schools of nursing on the Madison and Milwaukee campuses. Following this option the student is considered to be in the 2-2 plan. Under this plan the B.S. degree earned is that awarded by the School of Nursing.

Required courses at Madison are listed in the School of Nursing bulletin; those required at Milwaukee appear in the University of Wisconsin–Milwaukee catalog. Each student must apply to the school of nursing which he wishes to attend for admission to the last two years of the nursing program. This should be done at the beginning of the sophomore year. Admission to the last two years will be based on qualifications for nursing, educational facilities of the school and other relevant factors.

Registered nurses who wish to obtain a bachelor's degree will be admitted to the programs described above. Advanced standing for previous work in a diploma or associate degree program may be earned through examination and satisfactory performance in an introductory required nursing course. The appropriate school of nursing should be consulted early for program planning.

3. The Baccalaureate Programs at UWGB, UWMsn, and UWM (3-2 plan). The student may undertake preprofessional education in nursing or nursing science at UWGB in the 3-2 plan. Under this plan, he spends three years at UWGB and two years at the school of nursing at the Madison or Milwaukee campuses of The University of Wisconsin. Upon graduation the student receives the B.S. degree from both UWGB and the school of nursing at Madison or Milwaukee. This 3-2 plan is recommended for students who intend to have a career in the teaching of nursing and nursing science. A program such as the following will fulfill the university requirements for the 3-2 plan and cover the subject areas recommended for the B.S. degree in nursing:

Courses and Credits

First Year
Liberal Education Seminar 101-102, Crises of Belief and Ecology, 6 cr.
Human Biology 102, Introduction to Human Adaptability, 3 cr.
Community Sciences 102, Man and His Social Environment, 3 cr.
Chemistry-Physics 110, Chemistry-Physics, 5 cr.
Psychology 102, The Behavior and Experiences of Man, 3 cr.
Environmental Sciences 102, Introduction to Environmental Sciences, 3 cr.
Electives, 7 cr.

Second Year
Liberal Education Seminar 217-218, Seminar and Practicum in Human Biology, 3, 3 cr.
Chemistry-Physics 111, 112, Chemistry-Physics, 5, 5 cr.
Biology 202, Biology of Cells, 4 cr.
Biology 203, Biology of Organisms, 4 cr.
Chemistry 302, Organic Chemistry I, 4 cr.
Psychology 202, Introduction to Social Psychology, 3 cr.

Third Year
Liberal Education Seminar 317-318, Seminar and Practicum in Human Biology, 3, 3 cr.
Chemistry 330, Biochemistry, 4 cr.
Physiology 402, Mammalian Physiology, 4 cr.
Microbiology 302, Principles of Microbiology, 3 cr.
Human Biology 331, Infancy and Early Childhood, 3 cr.

Human Biology 332, Middle Childhood and
  Adolescence **or**
Psychology 338, Psychology of Learning, 3 cr.
Electives, 7 cr.

Pharmacy. The University of Wisconsin pharmacy program offers the bachelor's degree after completion of five years of work—two years of prepharmacy which may be completed at UWGB, and three years in the School of Pharmacy on the Madison campus. Basic requirements of the pre-pharmacy program are 60 semester hours including:

Courses and Credits
Liberal Education Seminar, 6 cr.
Chemistry-physics, 15 cr.
Organic chemistry with laboratory, 8 cr.
Biology, 8 cr.
College algebra and trigonometry, 5 cr.
Economics, 3 cr.

Medical Technology. A student may complete the first two years of the medical technology program at UWGB. The remaining two years of the special four-year program leading to the B.S. degree may be completed at either the Milwaukee or Madison campus. The medical technology program requires a broad background in the physical and biological sciences. Clinical subjects are taught in the senior year. The student must accumulate 90 credits with a grade point average of 2.3 for admission to the senior year at Madison and 2.0 at Milwaukee. The medical technology program is fully accredited by the Council on Medical Education and Hospitals of the American Medical Association. Upon graduation, the student is eligible to apply for board certification as a medical technologist (ASCP).

During the first two years the student should complete two semesters of a foreign language, or have completed two years of a foreign language in high school; three semesters of chemistry-physics; two semesters of organic chemistry; one semester of animal physiology, zoology, and parasitology; two semesters of the Liberal Education Seminar or English; two semesters of English literature and language; and one semester of college algebra.

Veterinary Medicine. A student interested in seeking admission to a professional school of veterinary medicine should secure catalogs from the schools to which he might apply. The University of Wisconsin does not grant a degree in veterinary medicine.

The student interested in veterinary medicine should consult his adviser as early as possible to work out a course program that will satisfy the admission requirements of the school of veterinary medicine of his choice. While admission requirements vary, the following requirements are typical.

A minimum of two years of prescribed preprofessional college work is required, in which the student must have attained a stipulated grade-point average, which ordinarily is higher than the 2.0 level. Further, an applicant for admission to a professional college of veterinary medicine presents a total of no less than 60 semester hour credits from an approved college or university. Thus, the future applicant should check with the college of veterinary medicine of his choice, to be sure that preprofessional work at UWGB is approved. Typically, credits include the following:

Courses and Credits
Liberal Education Seminar or English, 8 cr.
Chemistry-physics, 15 cr.
Organic chemistry, 8 cr.
Biological science, 8 cr.
Algebra and trigonometry, 6 cr.
American government, 2 cr.

Because of limited facilities, admission to a college of veterinary medicine is on a competitive and selective basis. A pre-admission conference with members of the veterinary faculty or admissions committee is usually required. High school records, scholastic attainment in preprofessional course studies, aptitude, character, and personality are given special consideration in the selection of candidates. Other qualifications being equal, residents of the state in which the veterinary school is located are given preference.

A student in veterinary medicine who wishes to receive both the degrees of Doctor of Veterinary Medicine and Bachelor of Science must take at least three years of work in the curriculum at UWGB. His program must have the approval of the dean of the College of Human Biology, and preliminary approval of the veterinary medical school of his choice. The professional curriculum extends over a period of four years and leads to a degree of Doctor of Veterinary Medicine.

Veterinary Science. Graduate courses in the Department of Veterinary Science at The University of Wisconsin–Madison are designed to give advanced training to graduate veterinarians and other qualified persons interested in research on animal diseases.

Programs leading to the Master of Science and Doctor of Philosophy degrees are offered directly by the department, or jointly with related departments. Special work may be taken in bacteriology, immunology, parasitology, pathology, physiology, and virology as applied in the veterinary field. Students majoring in veterinary science may choose a minor in any of the related sciences.

Home Economics

The student interested in securing a bachelor's degree in home economics may attend UWGB during his freshman and sophomore years, transferring to The University of Wisconsin–Madison School of Home Economics at the beginning of his junior year. This transfer is not automatic; the student must be admitted by the School of Home Economics. A Wisconsin student must present a grade-point average of at least 2.0. A nonresident student must present a 2.5 grade-point average. A student transferring from UWGB must meet all the requirements of the School of Home Economics. Substantial equivalents will be accepted for required courses, but no requirements will be waived.

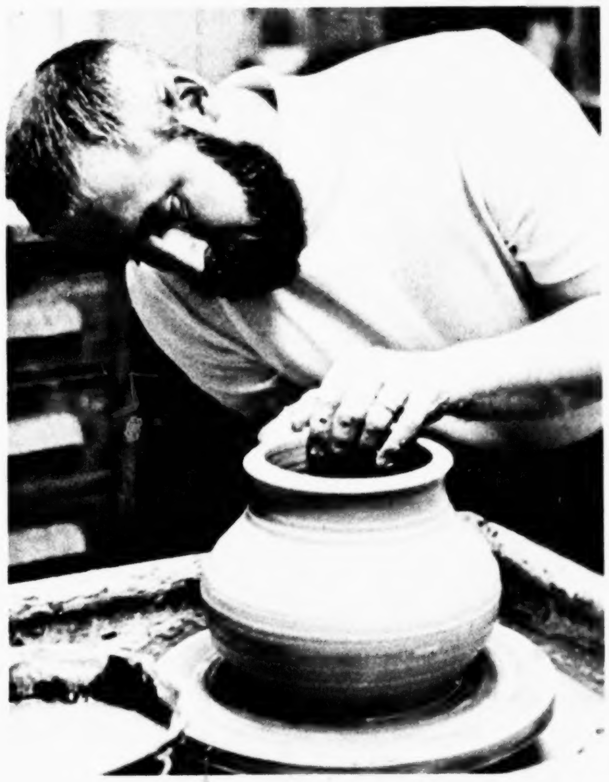
The preprofessional student in home economics should obtain a copy of the catalog of the School of Home Economics in Madison, and plan the program of his first two years with his faculty adviser. The following freshman and sophomore courses are required:

Courses and Credits
Liberal Education Seminar or English, 6 cr.
Literature, 6 cr.
Introductory economics, 4 cr.
Introductory psychology, 4 cr.
Introductory sociology, 3 cr.
General chemistry or equivalent, 5 cr.
Human physiology, 4 cr.
Course work in human nutrition is also advised.

The School of Home Economics offers, through the Graduate School in Madison, programs leading to the master's and doctoral degrees.

Law

Graduation from an approved college, such as UWGB, is a prerequisite for admission to virtually every law school in the United States.



In limited cases, however, exceptional students who have completed at least the first three years of work leading to a bachelor's degree at UWGB, and whose academic record and aptitude for law study are especially promising, may be admitted. This exception will be amplified below.

In the words of the Law School of the University of Wisconsin–Madison, "it is impossible to recommend a precise course of study or list of courses for all persons intending to study law. In fact, since law touches every facet of human life, the law school looks for diversity in educational background. . . ."

The Association of American Law Schools has the following observations concerning desirable areas of pre-law study. One area is the communication of ideas: the lawyer must be able to communicate effectively in oral and written expression. Logic is a part of a lawyer's necessary equipment, and its mastery should be pursued.

Courses in the social sciences are recommended, for there exists an enormous range of legal issues requiring information from the social sciences for their intelligent resolution. History is recommended, for history relevant to law is the very foundation stone of western society. Courses in the physical sciences provide a rigor of training and precision which will help the student engage in the rigorous and precise thinking he will need in the practice of law.

The study of philosophy provides training in handling abstractions, and a specific field of philosophy, ethics, is in a sense what law is all about. Accounting is a practical study, the rudiments of which lawyers must know, for accounting is the basic language in business.

Finally, law schools recommend that attention should be paid to three principles: the principle of excellence of instruction, which means studying under the best teachers; the principle of pleasure, which means studying those subjects the student will like when he has worked hard at them; and third, the principle of depth, particularly if this involves a major writing project.

The pre-law student is urged to purchase a copy of a handbook entitled "Law Study and Practice in the United States," which may be ordered from the publisher, West Publishing Company, St. Paul, Minnesota 55102. After studying the handbook, the student should plan his program at UWGB in conjunction with his faculty adviser.

Undergraduate students with grade-point averages well over 3.0, and scores on the Law School Admission Test in the upper tenth percentile may be admitted to a combination program, in which the student transfers to the college of law from UWGB at the end of the first three years of work. The exceptional students who have embarked upon this program will secure a bachelor's degree from UWGB when they satisfactorily complete the requirements for the degree of Doctor of Law (J.D.).

Social Work

Accredited schools of social work offer a two-year program of graduate study leading to the degree of Master of Social Work (M.S.W.). Admission to the graduate program is based on scholarship and personal qualifications for the profession. At the undergraduate level, eight semester courses in the social sciences are recommended, including such areas as anthropology, business, economics, psychology, geography, history, philosophy, political science, sociology, and the professional collateral in social services.

Theology

All accredited theological seminaries and divinity schools require the bachelor's degree or its equivalent for admission. The American Association of Theological Schools, the accrediting agency, strongly recommends the liberal arts course as the best background for admission, and suggests the following undergraduate program:

Courses and Credits

Liberal Education Seminar or English, 6 cr.

Literature, composition, and speech, 12 cr.
Philosophy, 9 cr.
Religion, 9 cr.
History, 9 cr.
Natural science, 6 cr.
Social sciences, 18 cr.
In addition, reading knowledge of a foreign language is advised.

The pre-theology student will find, in working out his course program with his adviser, that satisfying the general degree requirements at UWGB will almost automatically fulfill admissions requirements for graduate schools in theology, with the exception of the course work in religion.

Water Resources and Hydrology

The environmental control and ecosystem analysis concentrations in the College of Environmental Sciences provide the basic background required for entry into graduate hydrology programs. The student, with the advice and approval of his adviser, can build a program with a meaningful combination of courses which will focus on the student's special interests. Such a pregraduate hydrology program can relate to geology, engineering, soils, meteorology, economics, or administration.

COLLEGE AND UNIVERSITY TEACHING

The teaching profession in institutions of higher learning differs markedly in its educational requirements from the teaching profession at the elementary and secondary level. To enter the ranks of the academic profession, emphasis is placed entirely upon mastery of the subject matter field the prospective professor wishes to teach. There are no professional courses in teaching methods or in practice teaching. Instead, it is expected that the student will secure a bachelor's degree in the field in which he wishes to teach. Subsequently he enters a graduate school and pursues a program of graduate study leading to the master's or doctoral degree. While at one time the master's degree was enough, the trend is strongly toward securing what is called a terminal degree, which means the highest degree in the field a graduate can attain. In most fields, it is the Ph.D. degree, but in some fields, such as fine arts, another degree is considered to be terminal.

For admission to a graduate school, the applicant's credentials are ordinarily examined by a committee of professors in the discipline the applicant wishes to pursue. In deciding whether or not to admit the applicant, the committee looks primarily to the grade-point average the student has attained. Excellent grades are especially important in the discipline of choice. Other things being equal, the student should have taken a considerable amount of work in that discipline. At UWGB, this means that he should have chosen an option or collateral in that discipline or field. A student with an exceptionally high grade-point average may be admitted, even though he does not have adequate preparation in the discipline, in which case he will probably be required to take undergraduate courses for credit in preparation for his graduate work.

The student interested in pursuing an academic career should write to the Educational Testing Service, Princeton, New Jersey 08540, to secure a copy of the handbook describing the nature and components of the Graduate Record Examination. Almost all graduate schools in the United States require applicants to take the Graduate Record Examination.

Part 2: Curricular and Co-Curricular Enrichment

A TOTAL EDUCATIONAL EXPERIENCE

The educational program at UWGB is a total experience for the student, combining the world of books and instruction with the world outside the classroom in a way that makes him feel his wholeness. The philosophy behind this approach is that what the student is learning and what he is doing have a unity and integrity that validate their relevancy.

Curricular and co-curricular programs, as well as special resources and facilities, combine to enrich and extend the academic plan of UWGB so that the student's involvement is complete and his education is rich and varied.

These programs and resources are designed to meet the needs of a wide and diverse range of students, in addition to providing each individual with the services, activities, and resources he needs to enrich his academic program. Not only do the programs themselves provide flexibility in meeting a wide variety of needs; the student is allowed maximum flexibility in the selection and use of the resources that most benefit and enhance his particular intellectual, social, and physical needs.

Individualization of Learning

The student at UWGB is given great flexibility in the selection of his program. Firmly required courses are minimal in number and many of the requirements are specifications of competence that can be met by special examination. The student who feels he is qualified can pass and receive credit for any course by taking an appropriate examination without enrolling for the course. Most courses taken outside the concentration-option in which a student is majoring can be taken on a pass-fail basis.

The 296-299 and 496-499 series of courses permit individual work for all students. These courses must always be taken for a regular grade (not pass-fail). Normally, a student cannot take more than one 496-499 course per semester. The instructor's advance permission is always needed. A maximum of ten credits can be accumulated in 296-299 and 496-499 courses.

All curricula are intended as suggestions only, not as inflexible guides. A student who wishes to propose a major concentration and/or option of his own design may do so. It is subject to the advice and approval of the academic adviser and the appropriate dean(s). The student should consider all courses offered by the University as a pool from which he can select those relevant to his objectives. Majors are *normally* interdisciplinary, cutting across college, concentration, and option lines.

For these reasons, courses described in this catalog are not normally cross-listed. Furthermore, the cross-listing of a few courses should not lead the student to conclude that other courses cannot be suitably worked into any particular major.

Prerequisites listed with course descriptions are to be considered as essentially advisory and not as firm requirements. They indicate the level of proficiency required in order to carry on a course. The student who believes he has the level of proficiency necessary without taking the suggested prerequisite can enter the course with the consent of the instructor.

UNDERGRADUATE DEGREES

The University of Wisconsin–Green Bay offers five undergraduate degrees:

Bachelor of Arts or Science, Environmental Sciences
Bachelor of Arts or Science, Human Biology
Bachelor of Arts or Science, Community Sciences
Bachelor of Arts or Science, Creative Communication
Bachelor of Arts or Science, Administration

For graduation, 124 semester hours are required. A semester's minimum load for a full-time student is 12 credits; the maximum load is 18 credits. Qualified students who wish to take more than 18 credits in any one semester may

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submit a petition. A normal or average student load is 15 or 16 credits.

4-1-4 Semester Plan

The University operates on a 4-1-4 semester plan, with the fall semester opening in early September and ending in mid-December and the spring semester running from early February to the end of May. A special studies period is held during the month of January.

Early Graduation

Under the 4-1-4 semester plan, a student attending UWGB may choose to graduate in four years, taking a slightly lighter course load during the regular semesters. A student attending UWGB during each January Practica (special studies period) plus each major fall and spring semester can graduate in three and one-half years without attending summer school. A student who attends summer school in addition can easily graduate within three years.

January Practica and Special Studies Period

The University of Wisconsin–Green Bay has organized its instructional program with a view to helping students relate values, purpose, and learning to crises of our environment. Relevance is a key concept underlying the theme colleges and is even more intensified by the focus on environmental crises implicit in the concentrations.

The 4-1-4 calendar provides a unique one-month focus where energies can be concentrated on relevance. January programs emphasize the application of theory and concept to a problem setting. Thus, special small group programs called practica are developed by faculty members and are open to students on an open-choice basis.

The required projects related to the sophomore and junior liberal education seminars are completed by many UWGB degree candidates during January. These projects are held both on and off campus. In addition, structured seminar programs are available, especially for freshmen and seniors. These seminar programs are held on campus and related to relevant themes. Other program activities are planned by colleges, concentrations, and options.

Students have the opportunity to propose individual study projects (courses numbered 296-299 and 496-499 in various fields) after securing the sponsorship of a member of the UWGB faculty who supervises and evaluates the work.

Program activities carry from one to four credits toward graduation from UWGB. A student registers for a particular activity during January when he enrolls in September. Activities are graded on a pass-fail, or A-B-C-D-F basis at the option of the student.

Special January Practica are numbered 195, 295, 395, or 495 and the title of the seminar or independent study project appears on the student's transcript. No additional fees for continuing students or new second semester registrants are charged for January month practicum participation. Any student registering only for January practicum credit or non-credit is charged the regular per credit fee. Students are expected to pay expenses incurred in any off-campus program. Some financial aids are available for these programs.

A special series of fine arts activities and lectures is sponsored in relation to the themes addressed during January. Student organizational and social activities continue during the month with special programs.

In general, the January Special Studies period can be used for the following purposes:

1. For the practica portion of the Liberal Education Seminars in the sophomore and junior years (LES courses 212, 214, 216, or 218 at the sophomore level and LES courses 312, 314, 316, or 318 at the junior level). Three credits each.

2. For special seminars or practica especially for freshmen and seniors, but may be taken by

sophomores and juniors as well (January Practica 195, 295, 395, or 495). Normally three credits.

3. For remedial or extra elementary level work, especially in English, mathematics, and the foreign languages. Courses and credit as appropriate. Especially suitable for freshmen and sophomores.

4. For individual study projects. Appropriate for all students. (Courses numbered 296-299 and 496-499 in various fields). One to four credits, as arranged.

Summer Session

A summer session is conducted at each of the campuses of The University of Wisconsin–Green Bay. Summer programs are an integral part of the academic plan, although not required. Undergraduate courses of a wide variety are offered to complete distribution, tool subject, option, concentration, and professional school requirements.

Many students from colleges and universities across the country attend the summer session at UWGB campuses, taking advantage of many courses which meet degree requirements at their parent institutions. The majority of courses are scheduled in the late afternoon and evening, making it possible for students to work full time and earn college credit simultaneously. A large number of adults in the communities of the area also take advantage of the summer program of studies.

The recent high school graduate will find credit courses and other special programs available to him during the summer. Study skills, introductory courses in many fields, and special learning programs consisting of honors work, composition skills development, basic mathematics preparation, and foreign language acceleration are conducted. Tutorial assistance and individual or small group programs characterize this aspect of special summer services.

Undergraduate studio experience in a variety of art forms is available through the Peninsula Summer Studios, offered at Fish Creek in Door County in cooperation with University Extension and the Peninsula School of Art, Inc.

A unique program of dramatics activities is offered at each campus during the summer session. Marinette's popular Theatre On The Bay produces four shows over an eight-week period. Other campuses produce a variety of dramatic and musical offerings. Students may enroll for credit in theater courses at each campus, with instruction covering such areas as stagecraft, acting, and film production.

A number of courses at both the graduate and undergraduate levels are offered for intensified periods of less than eight weeks in length. This enables the student to earn credit for summer work in a specialized area without devoting the entire summer to it. It also allows him to fulfill certain degree requirements, in foreign languages for example, by taking two consecutive four-week workshops and earning three to four credits for each.

Liberal Education Seminar requirements in off-campus and cross-cultural practica also can be satisfied during the summer with appropriate study trips and/or work experience.

University Extension, in cooperation with UWGB, offers graduate courses at nearly all campuses. These courses are in subject matter fields as well as professional education. Many area teachers find that they can complete certification requirements, earn credits toward an advanced degree, satisfy school board requirements, and continue their professional development by taking these courses at UWGB during the summer.

For the high school student, clinics and workshops, of one or two weeks in length, are a regular part of the UWGB summer session. Programs in such areas as band and choral music, basketball, soccer, journalism and drama are available at various campus locations. While these clinics and workshops have been scheduled as commuter activities, they have drawn students from many parts of Wisconsin. These activities will be expanded in the summer of 1971, when residence halls are available.

Social and cultural activities are planned each summer by a program director at each campus. Students will find many opportunities for fun while they earn credit.

The following are categories for admission to the UWGB summer session:

Temporary UW Inter-Campus Transfers. A student who plans to enroll only for the summer session at one of the UWGB campuses should obtain a Temporary Inter-Campus Transfer form from the Admissions or Registrar's office at his home campus. The completed form should be sent to the UWGB Office of Admissions.

Non-UW Undergraduates. To take work at a UWGB campus as a summer session special student, the applicant must be eligible to continue at the college or university last attended. He is responsible for determining the acceptance of credits by the institution at which he is working for a degree. Admission as a summer session special student carries no commitment for permission to register in the regular school year at any campus of The University of Wisconsin.

High School Juniors and Seniors. A student who has completed the 10th or 11th grade and is in the upper 10 percent of his class should discuss his plans for college and obtain written permission to attend from his principal or school head; the permission must accompany the application.

Continuing UWGB Students. A UWGB student enrolled at any campus can pre-register for summer session courses during the spring. He does not need to apply for admission to the summer session.

The same academic regulations apply in the summer as during the regular academic year; however, a maximum credit load is 9 credits.

Complete information on specific summer programs may be obtained from the Director of Summer Sessions, The University of Wisconsin–Green Bay or the director of student affairs at the campus the student plans to attend. Special publications and announcements about the coming summer's programs are available in advance.

SPECIAL LEARNING PROGRAMS

UWGB has developed special learning programs to meet the needs of particular students. Three such programs are administered by the office of the Director of Special Learning Programs: the Honors programs, the New Opportunities programs, and the Remedial program. Details of these programs are available in separate brochures.

Honors Programs

Honors programs identify, reward, and develop students who exemplify the characteristics stated as the educational goals of the University. The Honors student is seen as one who combines high academic achievement with demonstrated willingness to make enhanced capacities and talents available to other members of the University community. The freshman whose grades place him within the top 1 percent of the entering class is invited to begin Honors work during his freshman year and he may enjoy all the special prerogatives provided for students in the Honors programs.

The sophomore or junior is invited to become a member of the Honors program if he has at least a 3.5 grade point average. The student with a grade point average below 3.5 may also be invited if he has demonstrated outstanding achievement over two semesters of academic work and has demonstrated willingness to participate actively in the life of the University community.

Examples of participation by Honors students or prospective Honors students include work as resource assistants in the Liberal Education

Seminars, tutors in the remedial programs, and counseling assistants in the Office of Student Affairs. Special prerogatives for Honors students include the following:

1. An opportunity, in consultation with theme colleges or Honors advisers, to redefine degree requirements usually imposed upon other undergraduates; specifically, prerequisites for courses and all-University requirements may be waived.

2. An opportunity to waive the all-University limit of no more than 10 credits of 496-499 courses; the honors student may take as many as he wishes.

3. An opportunity to participate in special independent study programs through the identification of a distinctive Honors concentration or concentration-option.

4. An opportunity, in consultation with theme college or Honors advisers, to pursue for credit a number of tutorial opportunities with faculty, limited only by the interest of the individual student involved.

5. An opportunity to elect special Honors sections of the Liberal Education Seminars and selected other courses and to participate in Honors off-campus experiences during the sophomore, junior, and senior years.

6. An opportunity to attend special lectures, seminars, and colloquia involving guests of the University and limited to Honors students.

7. Special library privileges, including the use of special study areas and book loan privileges similar to those enjoyed by faculty.

8. An opportunity to participate in exchange programs with Honors programs at other universities.

9. A diploma which notes that the student is an Honors graduate of the University as well as a graduate of a theme college or school.

A student with a cumulative grade point average of 3.25 is qualified to graduate cum laude. A student with a cumulative grade point average of 3.5 who has successfully taken senior Honors is qualified to graduate magna cum laude. A student with a cumulative grade point average of 3.75 who has successfully taken senior Honors is qualified to graduate summa cum laude.

Most concentrations and concentration-options at UWGB offer students who have shown outstanding capacities in a given academic area the opportunity to enter special Honors programs developed by the theme colleges and the School of Professional Studies. Special prerogatives for such students have been determined by the deans and faculties. Information on such opportunities is available through the office of the Director of Special Learning Programs and the office of the appropriate dean.

New Opportunities Programs

Two distinct programs have been developed for students seeking new educational opportunities. These programs are designed to make possible undergraduate education for (1) those who do not initially meet the normal entrance requirements of the University and (2) older students who wish to complete an undergraduate degree after a lapse of years.

The New Opportunities programs constitute an effort to carry out the following resolution adopted by The University of Wisconsin Board of Regents on May 17, 1968:

> Whereas the problem of providing equal educational opportunities is one of the urgent and major crises facing this state and the nation; and
>
> Whereas, by long tradition, this University has devoted its instructional, research and extension efforts to the problems of disadvantaged people whether disadvantaged by economics, geography, cultural deprivation or motivation; and

Enrichment

> Whereas the University Faculty Council, the University Faculty Assembly and the University Administration have recommended immediate attention to the problems of equal opportunity for all the citizens of the state,
>
> Be it resolved that the Regents of The University of Wisconsin direct the administration of the University to expand, within the limits of its resources, the University efforts to provide equal opportunity for disadvantaged citizens, with primary emphasis on Wisconsin residents. . . .

Students may seek admission to UWGB under the New Opportunities program if they are clearly in need of its special resources. Such need will be verified by consultation with their high school advisers and teachers and religious and community leaders. Others who may seek admission under this program are students whose college careers have been curtailed by military or family obligations. Special prerogatives for students in the New Opportunities program include the following:

1. An opportunity to participate without additional cost in a special learning program for UWGB credit during the month of August before the freshman and sophomore years.

2. An opportunity to participate without additional cost in a special learning program for UWGB credit during the month of January before the second semester of the freshman and sophomore years.

3. An opportunity to take advantage of credits earned in August and January by reducing the academic program by 20 percent during the regular academic year.

4. An opportunity to work with younger students in the New Opportunities program upon completion of the first two years of the program.

5. A general opportunity to improve skills and capacities by use of UWGB remedial services, particularly in English and mathematics.

6. Close work with program advisers in the special learning programs to assure that the student's academic program meets his immediate and long-range needs.

Freshman enrollees in the New Opportunities program should be aware that a leading objective of the program is to assure that they will be able to complete the junior and senior years without further special academic assistance.

Remedial Programs

Placement examinations may indicate the need for remedial work. Whether as a result of such tests, through the advice of a member of the faculty, or on his own initiative, a student may take special remedial work in English and mathematics.

While some full remedial courses do exist at UWGB, most remedial work is available on a tutorial basis with remedial specialists and is arranged through the office of the Director of Special Learning Programs.

OFF-CAMPUS STUDY

It is the philosophy of The University of Wisconsin–Green Bay that man's problems should be observed firsthand and experienced, not just studied through books or in the classroom, laboratory, or studio. Consequently, off-campus experiences for credit and non-credit are available which qualified students are encouraged to elect.

Major opportunities for off-campus study are contained in the sophomore and junior Liberal Education Seminars. During the sophomore seminar, a special project is done using the Northern Great Lakes Region as a laboratory. The off-campus experience in the junior seminar is in another culture. Opportunities to visit other parts of the United States or abroad will be available to qualified students. For students who participate in VISTA, the Peace Corps, or similar programs, credit equivalent to that given for all or part of the sophomore and junior seminars is available. In addition to the seminars, which are required of all students at the University, other types of off-campus programs for credit include special practica during the January special studies term.

A variety of volunteer off-campus opportunities are also available. These normally do not carry academic credit.

COMMUNITY OUTREACH: CONTINUING EDUCATION OPPORTUNITIES

As part of its outreach responsibilities and efforts, UWGB makes its educational programs and academic resources available to the people and communities of Northeastern Wisconsin. Late afternoon and evening courses are scheduled throughout the year and all daytime courses are open to adults who wish to enroll either on a part-time or full-time basis. In cooperation with University Extension, UWGB also provides continuing education opportunities through classes, seminars, and workshops for working men or women, retired persons, nonprofessionals and professionals, young and old, poor and prosperous. These opportunities are scheduled at the campuses in Green Bay, Marinette, Manitowoc, and Menasha and elsewhere at times convenient to those interested in participating.

In this age of rapidly changing technology and increasing educational demands for advancement, more adults are turning to their university campuses for additional education. Some are working toward career goals which include a Bachelor of Science or Arts degree. Others are enrolling in courses for credit that will enhance their educational or professional attainments.

UWGB encourages all adults to continue their education. Those who wish to take courses for credit may (1) enroll as regular students on a full-time or part-time basis or (2) enroll as special students who do not choose to obtain degrees. The special student may enroll as a regular student later, if he wishes.

Adults who can only enroll part-time are encouraged to take advantage of the opportunities

UWGB offers to advance educationally and professionally. For assistance in exploring these opportunities, all adults are encouraged to write or call the Office of Student Affairs at any of the four campuses.

A number of opportunities are open to each adult. Regular daytime courses are available to those who qualify and are able to attend. Late afternoon and evening courses, especially convenient for the man or woman who has a regular daytime employment schedule, are available both during the regular school year and during the summer session.

Adult members of the community register for credit in the same manner as other students. Fees are established on the basis of the number of credit hours taken. The Office of Student Affairs at each campus can provide specific information and assistance on registration, fees, and related matters.

Late Afternoon and Evening Course Opportunities

By their nature or content, some of the courses in UWGB's regular academic curriculum are of particular interest to adults and are scheduled for late afternoon or evening. These courses also are open to regular daytime students. Examples of possible late afternoon or evening courses for credit include the following:

Administration: Labor Relations 312, Collective Bargaining
Administration: Organization and Operations 310, Small Business Management in the Northern Great Lakes Region
Anthropology 305, Human Evolution
Biology 202, Biology of Cells
Economics 204, Regional Economic Analysis
Education 405, Individualizing Instruction
Engineering 302, Statics
Growth and Development 331, Infancy and Early Childhood
History 403, Political and Social History of Modern America
Literature and Language: French 225, 226, French Composition and Conversation
Mathematics 95, Intermediate Algebra
Mathematics 250, Computer Science I
Nutritional Science 232, Nutritional Significance of Food
Performing Arts: Drama 103, 104, Voice and Movement
Political Science 472, Parties and Pressure Groups
Psychology 335, Psychology of Attitudes and Public Opinion
Social Services 302, Methods of Public Welfare Investigation
Sociology 203, Problems of American Minority Groups
Visual Arts 202, Introduction to Ceramics

These or other courses may be offered in the late afternoon or evening, depending upon the adult interest. Individuals interested in having a particular course or group of courses scheduled for late afternoon or evening should make their interests known to the Office of Student Affairs.

Noncredit Classes, Workshops, Seminars, and Conferences

UWGB and University Extension cooperate to provide various noncredit offerings that focus on the problems and opportunities of communities, individuals, and families.

Offerings focusing on communities may cover such topics as enhancing environmental quality; community and regional planning and development; economic and social development of Northeastern Wisconsin; business, industry, and labor management; recreation development, including planning and management of facilities and services; conditions of individual, family, and community disadvantage; and cultural development in communities.

Offerings with an individual focus cover a broad array of possibilities, including professional improvement in the fields of education, business management, public administration or governmental services, recreation and leisure use, communications, and social services. Noncredit offerings in literature, history, philosophy, music, theater, dance, and the visual arts may contribute to the general educational advancement or cultural enrichment of the individual.

Distinctive Seminars and Conferences

From its inception, UWGB has conducted special academic seminars and conferences which help to highlight the ecological focus of the University and the unique contributions of its four theme colleges and its School of Professional Studies. Nationally known individuals, as well as leaders from Wisconsin, are involved in these seminars and conferences. Interested adults are encouraged to participate.

"Informed Forces for Environmental Quality," the first of such distinctive conferences held at UWGB, attracted almost 200 educators, public officials, industrial leaders, members of citizen conservation groups, and outdoor writers. A cooperative venture among the states of Michigan, Minnesota, and Wisconsin, and national conservation and labor organizations, it was presented jointly by UWGB and University Extension.

Undergraduate Credit Courses Through University Extension

In cooperation with academic departments on the Madison and Milwaukee campuses of The University of Wisconsin, University Extension and UWGB offer some courses for undergraduate credit that otherwise would not be available here. These courses are scheduled at the campuses and at such other places as meet the needs of the residents.

Some summer courses which can be taken by adults are offered cooperatively by University Extension and UWGB. For example, summer courses are offered at Door County in painting, art survey, sculpture, and art metal. Summer courses also are offered at the four campuses of UWGB. Most classes are held at times convenient for adults.

Graduate Credit Courses Through University Extension

In cooperation with academic departments on the Madison and Milwaukee campuses, University Extension offers selected graduate credit courses in Northeastern Wisconsin. Examples of such courses are Computer Applications in Educational Administration, Elementary School Curriculum, Instructional Innovations and Procedures for Driver and Traffic Safety Education, Human Behavior and the Social Environment, Social Policy, and Social Welfare Organization.

Individual Educational Objectives

Individuals who wish to make some evaluation of their possible educational objectives or goals can obtain assistance from counselors in the Office of Student Affairs or from the Continuing Education Agent, University Extension, at any of the UWGB campuses. Counselors will in turn refer special questions or requests for information to the UWGB academic deans or to other appropriate individuals.

Community Outreach Possibilities

Because of its focus on problems of the environment and its mission to help resolve those problems through education, UWGB is particularly responsive to the needs of Northeastern Wisconsin. For information about the community outreach possibilities and efforts of UWGB, contact Assistant Chancellor, Office of Community Outreach and Research, The University of Wisconsin–Green Bay, Green Bay, Wisconsin 54305.

CO-CURRICULAR PROGRAMS

In keeping with the philosophy of the University, student life programs emphasize opportunities for students to relate a field of knowledge to practical world problems and situations. The application of developing skills, new understandings, and interests is often demonstrated in co-curricular activities.

Artistic accomplishment, fostered by participation in the University's music, drama, dance, and visual arts programs, is demonstrated by students participating in band and choral groups, student play productions, and many other types of activities.

Students are encouraged to become aware of and involved in the community outside the University, reflecting UWGB's emphasis on the relevance of education and its application to area problems. Students interested in social welfare, for example, have initiated and gained experience in this field through a number of tutoring and community service programs radiating from all four UWGB campuses.

Students also have taken an active role in their own education by sponsoring speakers, dramatic presentations, and bus trips to gain information and insight into political and social issues of current interest.

The dynamic relationship between the curriculum and the co-curriculum at UWGB is well illustrated by the informal individual relationships between students and faculty, facilitated by active student life programs.

Counseling

One of the primary goals of the Office of Student Affairs is to help students realize their potential for bringing about creative change, both in themselves and in the world; in other words, encouraging students to make informed value judgments and to act upon them. Basic to this objective is the realization that each student is unique. Student Affairs staff members on all four campuses are available to students for personal, group, academic, and financial counseling.

Academic counseling is offered to every student in regard to planning an academic program to meet future goals. Ordinarily, new students are advised by a counselor in the Office of Student Affairs or by a member of the Liberal Education Seminar program. Once a decision has been made on the area of academic concentration, a faculty member from the appropriate theme college or the School of Professional Studies assists the student in further academic program planning.

Vocational counseling is available to students upon request. The Student Affairs staff helps each interested student investigate various vocational opportunities and alternatives in terms of his aspirations and abilities. Vocational interest inventories as well as occupational information files are included in the vocational counseling program.

Personal counseling is provided by the Office of Student Affairs, and when indicated, students in need of clinical or intensive counseling services are referred to resources in the community.

Placement and career counseling is designed to meet the counseling and placement needs of all UWGB students at any time from their freshman year on through graduation. The Office of Placement and Career Counseling provides a comprehensive career counseling service oriented to meeting the specific needs of the individual student. The student can take advantage of individual or group counseling sessions to assist him in reaching a career decision based on a full appreciation of his potential.

The placement officer provides up-to-date occupational and employer information related to the professional job market. The student is assisted in making contacts and preparing resumes for job interviews, with the object of making the transition from student to employee a meaningful and relevant experience.

Students wishing information on housing, employment, military service, selective service, educational benefits for war orphans and veterans, and rehabilitation programs for the handicapped are encouraged to consult with Student Affairs staff members for assistance.

Student Life

". . . Plans are underway for a three-week Canadian canoe trip by 12 UWGB students. The group will retrace over 400 miles of the original "Voyageur's Highway" used by French fur traders 200 years ago in the opening of the Northwest. Stimulated by a seminar in the economic history of the northern Great Lakes, the students will use maps and daily journals of the French explorers Radisson and Grosselliers for their routes and observations. . . ."

". . . As part of the continuing Fireside Series, two representatives to the state legislature will meet with a group of UWGB students next Wednesday. Their informal discussion will be directed at the legislators' recent controversial statements concerning student participation in the governing of the University. The Fireside Series provides students with the chance to invite any guest of their choice to meet informally with them on the campus to discuss issues of common interest. . . ."

". . . Next week 70 UWGB students and faculty members leave by chartered jet for 10 days of skiing and traveling in the French and Italian Alps, for under $250 per person. . . ."

The three programs just described are not realities—yet. But they illustrate the kinds of student life programs conducted each year at UWGB. Co-curricular activities emphasize the pursuit of individual interests as well as the discovery and exchange of new experiences. Student life programs at UWGB provide opportunities for self expression, both in individual pursuits and in group experiences, offering students the chance to see themselves as affecting individuals, capable of influencing their own environment.

Activities that encourage students to relate a field of knowledge to concrete problems around them are supported by a variety of community service and action projects. For example, students on the Green Bay Campus participated in a door-to-door campaign, successfully supporting an open housing ordinance for the city of Green Bay. Students at the Fox Valley Campus have assisted migrant workers and Marinette students have done volunteer work at a day care center. UWGB students have raised funds for the Biafran, United Fund, and cancer drives, participated in muscular dystrophy telethons, and collected clothes for rural Kentuckians.

On the campuses themselves, Fox Valley's "Intercom" series has provided speakers on a number of contemporary issues, the Manitowoc student government association has provided draft counseling for interested students, and Green Bay students have successfully operated a non-profit book exchange.

Political and social interests are expressed through a number of student organizations. The Young Democrats and Young Republicans are active on several campuses. Two organizations on the Green Bay Campus—Gamma Sigma Sigma for women and Alpha Phi Omega for men—involve their members in a variety of service projects. Drama clubs are active on each campus, and students publish several literary magazines. The *Bay Badger*, an all-campus student newspaper, is published bi-weekly.

There are several recreation organizations, including judo and diving clubs at the Green Bay Campus and ski clubs that involve students from all campuses. Manitowoc's Explorer's Club has conducted a nine-day canoe trip to Canada, bicycle outings to Door County, camping trips to northern Wisconsin, and spelunking expeditions. Chess, bowling, and soccer all claim student interest.

Intercollegiate Athletics

Basketball and soccer are given major emphasis in UWGB's program of intercollegiate athletics. Teams from the four-year campus in Green Bay compete with other major four-year institutions throughout the midwest and around the country in these sports.

In addition, Green Bay varsity teams compete in fencing, golf, tennis, and wrestling. The UWGB campuses at Marinette, Manitowoc, and Menasha continue to participate in the Wisconsin Collegiate Conference for two-year campuses in such sports as cross-country, golf, tennis, wrestling, soccer, and basketball.

Sports and Recreation

The Office of Sports and Recreation provides intramural and recreational opportunities that often bring students and faculty participants together. Included in the intramural program, usually in league and tournament organization, are badminton, tennis, basketball, bowling, table tennis, volleyball, and softball. Unstructured athletic activities also can be undertaken by individual students.

RESOURCES

Office of Learning Resources and Information Systems

Since UWGB is a multi-campus University with each campus a fundamental part of the same institution, the responsibility of the Office of Learning Resources and Information Systems is not only to serve the separate units but to assist in unifying them into an integral whole.

Such a role increases the importance of an effective communication system linking the four campuses for both administrative and academic functions. The present use of telephone lines for this purpose will eventually give way to a microwave network which will add visual as well as aural inter-connection.

The Instructional Resources Center functions as the nerve center for all media applications required by the various complexes of the University. As the nucleus for instructional resources and services, the center maintains a supply of media equipment on each campus which, with appropriate exchanges among the campuses, provides ample materials for virtually all instructional needs. In addition, the Green Bay Campus operates an audio and video distribution system to disseminate automated programs to classrooms or study carrels throughout the campus. The microwave network will expand this distribution system to encompass all the campuses.

To insure integrated program planning and development, the Office of Learning Resources and Information Systems and its media library are equipped to assist instructors in obtaining and evaluating materials, methods, and media used in instruction and in developing and preparing their own multi-media presentations for classroom or individual use.

Modern studio and production facilities are available for preparing tape, slide, or film presentations for playback over the distribution system or for ready access in the media library. In addition, full capability in graphics, photography, and similar areas is present to help both student and professor.

As a service to all campus units, Instructional Resources Data Systems operates a high-speed, general-purpose digital computer. Data Systems provides programming and computer operation services for academic functions, instruction and research for students and faculty, and for administrative offices.

The computer staff provides consultation and assistance to faculty, staff, and student users. The facility is centrally located on the Green Bay Campus and serves all campuses equally by an effective pick-up and delivery of programs, data, and other materials. Eventually this service will be extended to include data transmission devices for remote communication between campus units and the computer.

Libraries

Library collections totaling more than 110,000 volumes are housed in temporary quarters on the main UWGB campus. They will be moved to the main library building in the center of the campus when that structure is completed in 1971.

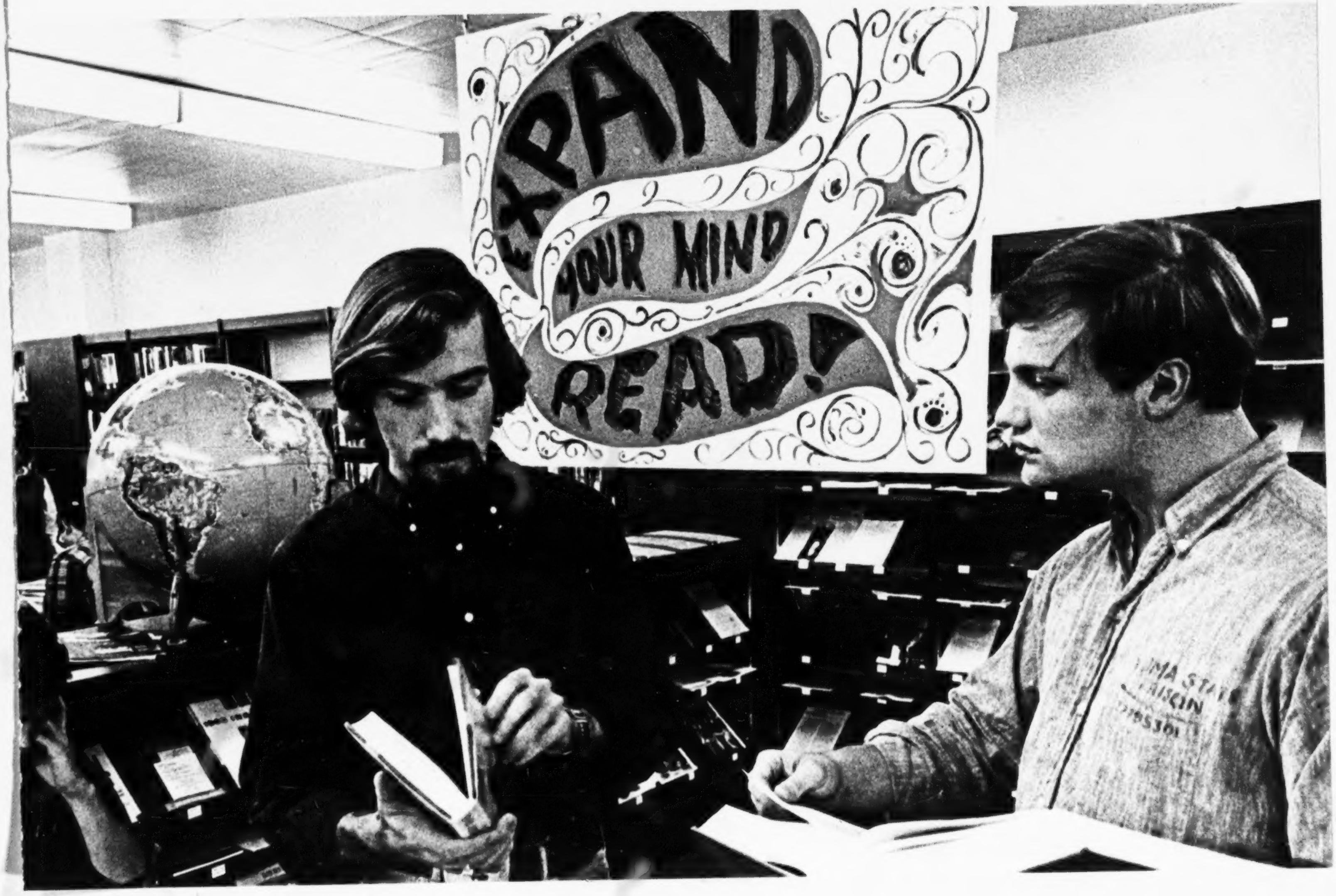
In addition, the library contains more than 10,000 reels of microfilm; 100,000 microprint cards; a collection of phonograph records; and reading, listening, and copying facilities. All materials in the main library and its branches are available at each of the UWGB campuses via regular inter-campus library truck delivery service.

The combined periodical subscription list for all UWGB libraries totals about 4,200, with backruns of the great majority of titles available on microfilm. This library has been designated as a full depository for United States government documents and for Wisconsin documents. Collections of United Nations documents and selected documents of foreign countries also are maintained.

In addition, the library is an official depository for Wisconsin and Michigan guadrangle maps of the U.S. Geological Survey. Negotiations are being completed to have the library designated as an Area Research Center of the State Historical Society; archival collections of the society dealing with this area and the UWGB archives will be housed in the main library building.

The library's open stack arrangement brings readers and books together quickly and pleasantly. For convenience and uninterrupted study, carrels, tables, and group study rooms are provided in close proximity to the collection.

A highly trained library staff is available to assist students and faculty in their work. A computerized acquisitions program and the most advanced



cataloging techniques operate to channel new books to readers with maximum speed and efficiency.

Resources of the Memorial Library at The University of Wisconsin–Madison are available to all students and faculty on all UWGB campuses through a weekly library truck delivery service from Madison, and faculty and students with advanced standing can obtain materials from libraries throughout the country and the world through the Interlibrary Loan Service.

Libraries containing from 10,000 to 20,000 volumes each are located at each of the three two-year campuses. Tailored to the unique offerings of each campus, these collections by no means duplicate each other or the main campus collection. A union catalog of all UWGB collections is maintained at the main library for lending purposes. This catalog is linked by direct telephone service with all of the campuses.

Each library is directed by a full-time librarian who is able to assist students and faculty in using and obtaining materials from all UWGB libraries and from outside sources. The best available means of communication tie all campus libraries together to make their resources available to all students.

Living-Learning Centers

The dynamic relationship that exists between the student's academic development and his living environment is supported by various residence programs based in campus housing units. Apartment-style residences, planned for occupancy in the fall of 1970, provide living-learning experiences for hundreds of UWGB students on the Green Bay Campus.

Student housing on the main campus is planned so that the program, staff, and facilities complement the academic program. Since the curriculum stresses independent study and small group seminars, the housing units are built with student privacy and opportunities for small group relationships as primary goals. Apartment-style residences provide single or double rooms for students and a common living-study area and kitchen facilities for every four students.

The variety of residence programs based on the grouping of students and the uses of staff and facilities will include the following possibilities as soon as the number of residential facilities permit:

The residential college theme, which emphasizes the environmental approach of the theme college by utilizing the faculty, facilities, and student groupings to encourage activity relevant to the specific college.

The living-learning center concept, which emphasizes the grouping of students according to a related or common seminar, possibly including the residency of the seminar leader.

Special purpose housing, which includes programs of varying lengths and purposes, such as language houses, group dynamics experiences, and Special Learning Programs workshops or projects.

Students at similar stages of academic progress might share several adjoining apartments while preparing for "off-campus" or "other-culture" experiences.

Off-Campus Housing

UWGB students are not required to live in University-owned housing. The Fox Valley, Manitowoc, and Marinette campuses are attended primarily by commuting students who live at home or in local rooms and apartments that are privately owned. Many students at the main Green Bay campus also live at home or in private residences.

For those who choose to live in private off-campus housing, efforts are made to implement programs similar to those for the campus residence units. The University Housing Office maintains a current listing of private rooms and apartments available to students. Such off-campus listings are maintained by the Office of Student Affairs on each of the four campuses.

Admission, Expenses, and Financial Aids

GENERAL POLICY

The University of Wisconsin has a uniform admissions policy for all campuses. One application blank is used throughout the University, and every student is expected to meet the same requirements for admission whether he plans to start his college career at one of the campuses of The University of Wisconsin–Green Bay, on the Madison campus, the Milwaukee campus, at UW–Parkside or at one of the campuses of the Center System.

The University of Wisconsin–Green Bay bases its admissions decisions on the policy of accepting all qualified applicants who seem to have a reasonable chance of meeting academic requirements for graduation from the University.

Admission Requirements

A high school graduate who wishes to qualify for admission as a degree candidate must normally fulfill the following requirements:

1. Rank in the upper half of his high school graduating class. (A resident of a state outside Wisconsin may be expected to rank above this level as measured by his high school record and standardized test scores.)

2. Provide the University with a recommendation from his high school principal or guidance counselor.

3. Take one of two standard tests required for admission: the American College Test (ACT), given by the American College Testing Program, Inc., or the Scholastic Achievement Test (SAT), given by the College Entrance Examination Board. The standardized test score (ACT or SAT) is considered as part of the application for admission, but there is no passing or failing of an entrance examination. The level of achievement indicated by test results will be used by an admissions counselor in carrying out the basic admissions policy.

4. Present 16 units of high school preparation distributed in the following pattern:

	English		3 units
	Algebra		1 unit
	Geometry		1 unit
			5 units
2 out of 3	Foreign language*		2 units
	History and social studies		2 units
	Natural science		2 units
			4 units
	Academic electives:		
	English		
	Speech		
	Foreign language*		
	Social studies		
	Natural science		
	Algebra		
	Geometry		
	Trigonometry		
	Analytic geometry		
	Calculus	Total	3 units
	Other electives**		4 units
			16 units

Admission Procedures

Prospective freshmen. A student seeking to enter the University as a freshman should complete an application for admission and take one of the two admissions tests. An application blank may be obtained from the student's high school office or from the admissions office at any University of Wisconsin campus. At the time of the admissions test (ACT or SAT) or later, the student should request that test scores be sent to the UWGB Office of Admissions.

An application should be submitted no later than August 1 for the fall term, December 15 for the spring term, or May 1 for the summer session. A student who does not qualify as a

*Fractional units not accepted
**Fractional units accepted

Wisconsin resident must submit a $10, nonrefundable fee with the application for admission. Wisconsin residents do not pay an application fee.

Many students are admitted to the University on the basis of grades earned through the junior year in high school plus a listing of subjects carried in the senior year, and therefore may receive a permit to register before high school graduation. Others may be asked to provide grades through the senior year to assist the admissions counselor in making the best possible evaluation of their potential for achievement.

Anyone who enters the University as a new student is required to have a physical examination by his own physician, at his own expense. The form to be completed by the physician will be mailed after a permit to register has been authorized. Results of the physical examination will have no effect on a student's eligibility to enter the University, but will be kept on file as confidential material.

Transfer students. The student who has attended any kind of school after high school graduation will complete the same application blank as new freshmen. In addition to the high school record, a transfer student must submit an official transcript from all schools attended since high school graduation. Included are nursing schools, business schools, vocational and technical schools, as well as other colleges and universities. The student must submit the records whether or not the work was completed and regardless of his desire to claim credit for the courses. The only exception is made for training schools attended as part of military service.

A student who has completed 15 or more credits at another college or university is not required to submit ACT or SAT scores. Residents of Wisconsin should normally have earned at least a "C" average in all college work; residents of other states should have earned grades averaging at least half "B" and half "C" on all credits carried. The student who transfers from another college or university must submit records of all high school and college work and evidence of honorable dismissal in all respects and/or eligibility to continue from each school attended.

UWGB is flexible regarding the transferability of credits from other institutions. While college credits from all accredited colleges and universities are evaluated, UWGB is concerned mostly with levels of proficiency. Through the use of the College Level Examination Program (CLEP) and other tests the level of proficiency of students with varying kinds of educational experience beyond high school is measured. In some cases UWGB credits are awarded for high placement on these tests.

Residence Requirements

In order to graduate from The University of Wisconsin–Green Bay, at least one year of residence (31 credits) in the junior or senior years is required. However, a student must take at least half the advanced work in his concentration or concentration-option in residence. And he must take at least two years (four semesters) of the Liberal Education Seminar. Provided they are UWGB administered, all courses count toward residence whether taken at night, during the summer, during the January Practica, or regularly during the two semesters.

A student who has completed the junior year and who meets the residence requirement, but who cannot complete his senior year in residence, for reasons of the military draft, marriage, or whatever cause, can graduate from UWGB. He must contact his adviser and, with his approval and that of his theme college or school, work out appropriate courses to be taken at another university as a substitute for residence at UWGB as a senior.

A student transferring to UWGB as an advanced freshman must meet all the requirements of the University and his theme college. A student transferring as a sophomore or a junior must meet all requirements except the year or years of the Liberal Education Seminar he has missed. Such a student will normally be given credit for meeting the distribution and tool subject requirements if he has taken courses that, although not equivalent, meet the spirit of the requirements.

A student may move freely from one to another campus of UWGB. One who does is not considered a transfer student.

All transfer students should complete the "general academic petition for transfer students" during their first semester. This form is available from the Office of the Registrar. It provides each transfer student an opportunity to indicate how he has met or plans to meet the requirements for graduation at UWGB, including the credits transferred to UWGB, as well as the credits taken at UWGB. It should be signed by the student's adviser and academic dean, and filed with the Registrar.

Grading System

Grade point averages are determined on a 4.0 basis. Students with a 2.0 average (C average) or better are in good standing. Those falling below a 2.0 average are placed on probation. The "pass" grade of courses having a pass-fail grading system does not count in grade point averages, nor do grades received from institutions outside The University of Wisconsin system.

Special Opportunities

The student who qualifies may be permitted to enroll in one or two University subjects while completing high school. Interested students should consult with their principals or guidance counselors before completing an application, since recommendations by these persons are necessary to insure that the program fits in with high school class schedules.

Early admission for superior high school students. UWGB provides opportunities to permit superior high school students to begin college work at any of the four campuses before graduation. Selection for early admission is based on the individual's high school record, social maturity, educational plans, and the appropriateness of the plan for the particular student. Scholastic ability is measured by the high school record and an ACT or SAT test score which places the student in the top tenth of high school class scores. Major consideration is given to the recommendation of the student's high school principal or guidance counselor. A student electing an early admission program should have completed at least the 10th grade and preferably the 11th grade.

Adult students and veterans. UWGB provides many opportunities for those who have not pursued higher education and for those who had to interrupt their education to work, raise a family, or fulfill a military obligation. These opportunities take into consideration that some adults in these categories do not qualify for admission on the basis of the requirements listed previously. The adult is well advised to study programs offered in Continuing Education Opportunities through University Extension (see page 95.) Should he wish to take one or two courses to work toward a degree, he is invited to consult an admissions counselor at any of the four UWGB campuses, or write for information to the UWGB Director of Admissions.

STUDENTS REGISTERED DURING 1969-70

Students registered during summer 1969 or during the 1969-70 academic year at one of the UWGB campuses may elect to graduate either under the requirements outlined in the 1969-70 catalog or those in the present document. The only change in university-wide requirements is in regard to tool subjects. Individual colleges and the School of Professional Studies have made minor changes in their requirements as new courses have been developed. One change has been retroactively made for all students: Organization and Operations 450, Policy and Program Implementation, is not required of any student since much of its content has been absorbed into the senior Liberal Education Seminar.

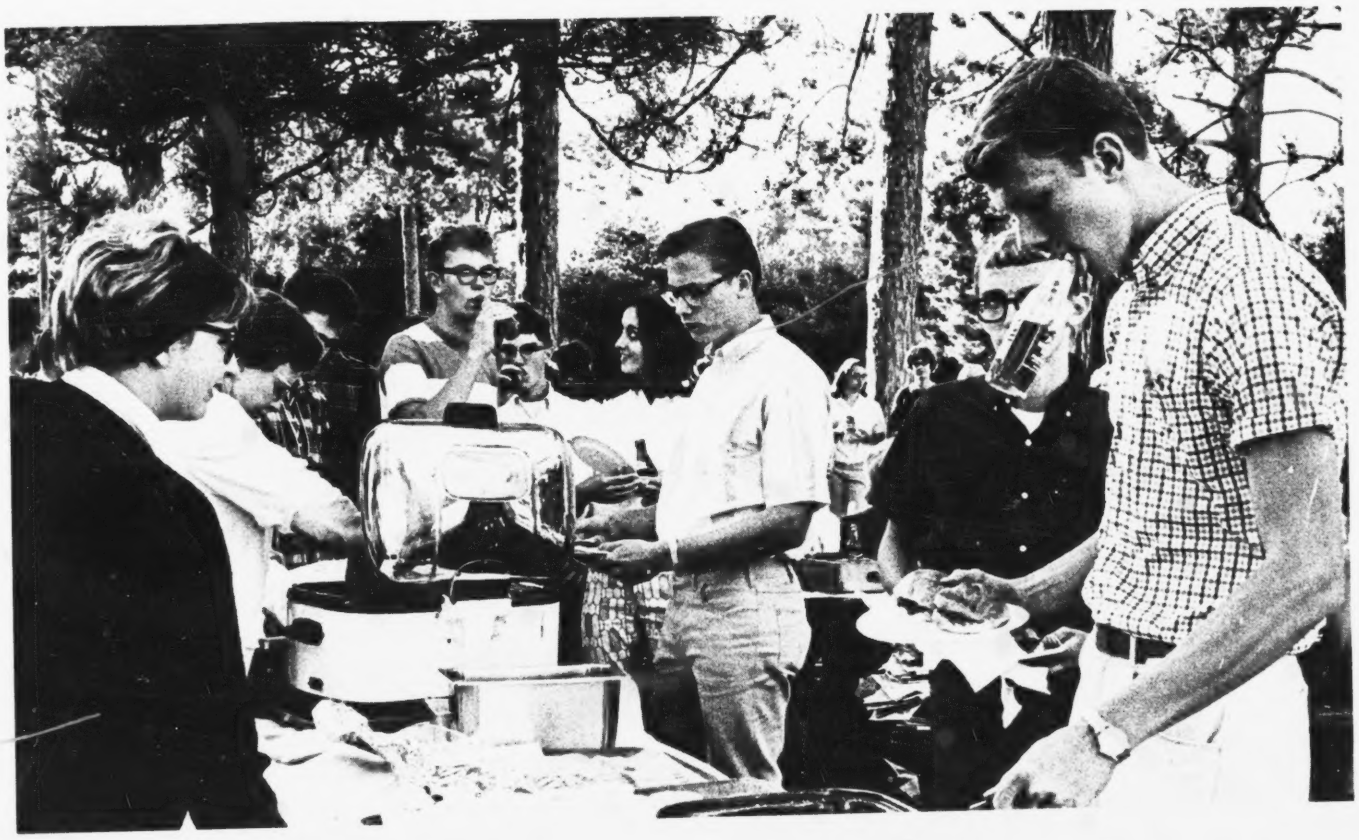
New or transfer students who first register at a UWGB campus during summer 1970 or later must meet the requirements as set forth in this catalog.

PLACEMENT EXAMINATIONS

Voluntary as well as compulsory placement examinations are offered by UWGB in most areas of high school work. Students entering mathematics, biology, chemistry, physics, or foreign language courses for the first time may be required to take a placement examination. Students in history and the social sciences may take such examinations. Normally, placement examinations do not lead to university credit; they indicate the level of work previously achieved and the course or courses in which to enroll. The results of placement examinations are advisory; a student may enroll in a course more advanced than indicated as desirable by the examination. Normally it is probably not wise to do so. The examinations may lead to the waiving of certain requirements, however.

Placement examinations may indicate the need for remedial, pre-college level work. Whether as the result of such tests or on his own initiative, a student will find special remedial programs available (see section on Special Learning Programs).

In regard to written and spoken English, the philosophy of UWGB is that effective English should be used at all times and in all courses. Any instructor may refer a student to the remedial English program at any time for extra help. Special attention will be given to written English in the freshman Liberal Education Seminar, and special attention to spoken English in the sophomore and junior Liberal Education Seminars. However, English is not a particular course to be taken and passed. It is a communications skill which must be constantly employed.



EXPENSES

Semester Fees

The following is the tentative academic year fee schedule. It is subject to approval and change by The University of Wisconsin Board of Regents and the Wisconsin Legislature. It is expected to be raised for the 1970-1971 academic year.

Fees for each semester total $225 for a student who qualifies as a Wisconsin resident and is enrolled in a program of 12 or more credits. An out-of-state student or nonresident pays $863 per semester. A student may register for 11 credits or less on a per-credit basis. Wisconsin residents pay $19 per credit; nonresidents, $71.50 per credit.

Exemption from the nonresident tuition is governed by Section 36:16, Wisconsin Statutes of 1963. This statute is administered by residence examiners in the Office of the Registrar, The University of Wisconsin, Green Bay, Wisconsin 54305. Since the regulations governing residency for tuition purposes differ in many respects from residency for other purposes, the student whose status may be in question is advised to consult the statute or write the Office of the Registrar for advice. Informal opinions or statements concerning residence status by other University personnel are not to be considered official.

The University reserves the right to alter any fees and tuition charges without notice. Legal residents of Wisconsin, with certain exceptions, are charged only fees. Nonresidents are charged a combination of fees and tuition.

Preregistration Fee

Preregistration forms must be accompanied by a check for $10, payable to The University of Wisconsin–Green Bay. This deposit holds a place on the class rosters of the courses requested and is applied to the semester fee when the student elects to complete payment, either with the advance registration packet or during the official registration dates. The fee is not refundable, should the student decide not to attend UWGB. The preregistration fee is not an additional payment but is part of the regular semester fee to be paid in advance as a form of "earnest money."

Late Registration, Late Payment

An added fee of $10 is charged for students who complete registration (except for payment of fees) after classes begin. If fees are paid after the first week of instruction, the student will be assessed a late payment fee according to the following schedule: during the second week of classes, $5; third week, $10; fourth week, $15; fifth week, $20; after the fifth week of classes, $25.

A late registration fee is not applicable to part-time students. However, the following penalties have been established for late payment of fees: during the third week of classes, $5; fourth week, $10; fifth week, $15.

Refunds

A student who notifies the Office of the Registrar in writing that he is withdrawing from the University during the early weeks of the semester or is making substantial credit hour adjustments is eligible for at least a partial refund of his fees. The following schedule was in effect for the 1969-1970 school year: withdrawal during the first week of classes, 100 percent; second week, 80 percent; third or fourth week, 60 percent; fifth or sixth week, 40 percent; seventh or eighth week, 20 percent. The date on which the official notice of withdrawal is submitted to the Office of the Registrar is the official date used in authorizing a refund.

Summer Session Fees

Fees for the summer session are based on the number of credits elected and are subject to change without notice by The University of Wisconsin Board of Regents. The following schedule was in effect for the 1969 summer session:

Expenses

Credits	Resident Fee	Nonresident Fee
1-2	$ 40	$100
3-4	$ 55	$145
5-9	$ 70	$190
Over 9	$100	$280

Fees are payable in full at registration and students are not considered enrolled until payment is made. Further information can be found in the summer sessions bulletin.

Extension Fees

Fees for credit courses offered by University Extension at the UWGB campuses are normally calculated at $17 per credit hour for undergraduate courses and $23 per credit for graduate courses. This fee schedule was in effect for the 1968-1969 school year and is subject to change without notice. Fees for noncredit courses vary widely, depending upon the type of offering and the size of the class.

A Typical Budget

The Wisconsin resident who attends UWGB for the full academic year covering the fall and spring semesters and the January special studies period, can expect approximately the following expenses:

	Commuter student living at home	Resident student living on campus
Fees	$450	$450
Books and supplies	$100	$100
Room and board	$400 (board only)	$950
Travel and miscellaneous	$500	$450
Totals	$1450	$1950

Nonresident students should add $1276 to this budget for out-of-state tuition. Changes of fees and tuition, which may be made without notice, would also change the budget totals.

The "living at home" budget shows the actual costs of supporting a student in college, including the cost of food, miscellaneous expenses, and travel. Commuters and their parents should keep in mind that they are already paying for these items; the only additional costs are for fees and books, a total of $550. Travel expenses may be higher than transportation costs of the student while in high school, depending on whether the student is a resident of a UWGB community or commutes from a more distant residence.

FINANCIAL AIDS

Policies

The Office of Student Financial Aids has as its primary objective that no academically qualified student shall ever be denied an education at UWGB because of lack of financial resources. There are many and varied financial aids available to qualified young men and women who wish to attend a UWGB campus. The student has the opportunity to draw from the overall University financial aids program. In addition, some campuses also have their own special programs designed to aid their students. The financial aids office at any of the four campuses can provide further information about financial aids and how the student may obtain assistance.

Parents' Confidential Statement

To help the University judge student need and award aid fairly, the parents are asked to fill out a confidential statement of their income, assets, and liabilities. The University can then determine the gap between what parent and student can provide and what his education will cost.

Considerations in determining a reasonable parental contribution include salaries of both parents, additional income, net worth of business or farm, real estate holdings, savings, investments, special family circumstances (such as the additional costs of two working parents), number of dependents, student's earnings and assets, extraordinary expenses (such as business or medical), and debts for certain purposes. Circumstances such as job expenses or debts, and support of elderly relatives or other children in college also are taken into account.

The student is expected to commit substantially all of his resources toward educational expenses before he requests assistance. For a student living on or near the campus, a car is unnecessary and often is regarded as an asset which can be sold to help a student meet his educational expenses.

Rarely can a student meet all his expenses through one type of financial aid. Summer and part-time work can provide only one-third to one-half of the expenses; few loan or scholarship programs can pay the total educational bill. This means that assistance generally must come from a combination of resources. A student may receive a loan and a grant, a scholarship and a loan, a loan and a job, or other combinations. He need not accept the whole package to receive part of it. Awards are based upon the total cost of supporting a student (see A Typical Budget, under expenses).

Financial Aid Application Procedures

Forms. Only one form is required. It is included in an application packet which can be obtained from guidance counselors and principals in Wisconsin high schools, or from the Office of Student Affairs at any UWGB campus. A student who submits an application is considered for all the types of financial aid for which he is eligible. An application for aid may be filed before the University issues a permit to register, but a student must have his permit before receiving an award of aid. A parents' confidential statement must also be completed and sent to the correct agency as listed in the instructions.

Deadlines. The application deadline for a scholarship grant and/or a combination of assistance is March 1 for high school seniors; February 15 for continuing and transfer students. High school seniors are notified between April 15 and May 15 of action taken on their applications. Continuing and transfer students are notified between May 15 and June 15.

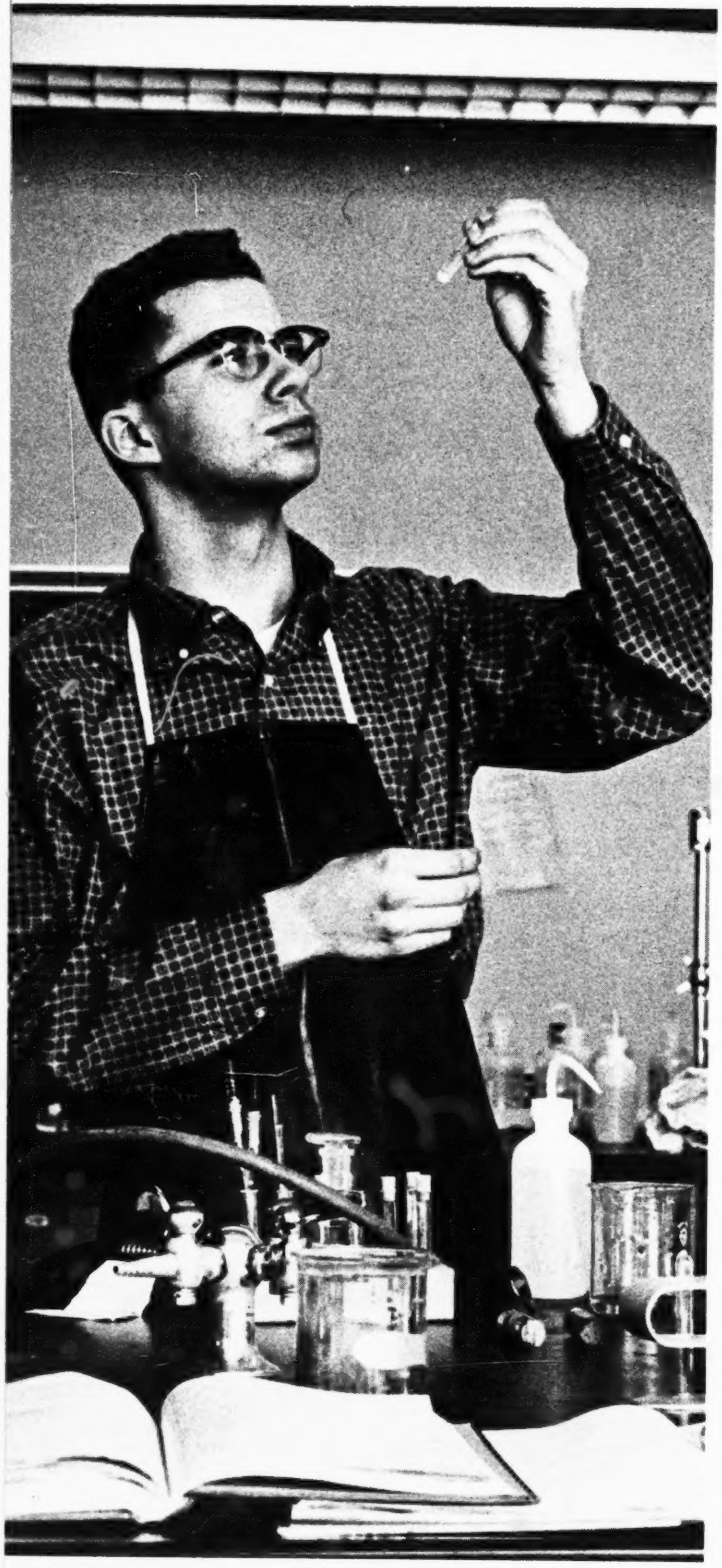
For National Defense student loans, work-study jobs, and State of Wisconsin loans, applications are accepted throughout the year as long as funds are available; however, applications filed before April 15 are given first priority. The University cannot guarantee loan or job assistance to those applying after the priority date. Students applying after the scholarship deadline dates but before priority dates will be notified of their awards by August 15.

Eligibility. In addition to financial need, the student must meet certain other eligibility requirements to qualify for various types of financial aid. In most cases he must be a citizen and permanent resident of the United States, must be enrolled as at least a half-time student, and must maintain a 2.0 or better cumulative grade point average. To be eligible for Wisconsin loans, the student must also be a resident of Wisconsin.

Types of Financial Aids

Scholarships. Nearly all scholarships are awarded on a merit-need basis. Awards to prospective freshmen are made on the basis of test scores, high school ratings based on selected traits, and rank in class based on high school work. These scholarships are contingent upon continued satisfactory grades in the senior year of high school. Awards to continuing and transfer students are made on the basis of the student's college cumulative grade point average.

Educational opportunity grants. The Higher Educational Act of 1965 created a new federal student assistance program to further help the student "of exceptional financial need." The institution awarding the federal grant must also offer the student an equal amount of assistance from its own resources, in the form of a job, a loan, or a scholarship. The student must accept the matching award when he accepts the grant. The grant may equal half of the student's



need up to a maximum of $1,000 and is renewable for up to four years as long as the student makes satisfactory progress and has financial need. Grants are considered as gift assistance and do not have to be repaid.

Loans. In some cases it is advisable to borrow to finance an education, if a student borrows only what he needs to maintain a minimum living standard. Generally, a student should not rely primarily on loans to finance his education and is advised to borrow no more than half of what he needs to meet his expenses.

National Defense student loan program. Under Title II of the National Defense Education Act of 1958, the student in good standing and with financial need can apply for National Defense student loan funds. Depending upon his need, an undergraduate may borrow up to $1,000 during any one fiscal year (July 1-June 30) with maximum disbursements of $500 per semester. Accumulated loans may not exceed $5,000. A borrower may have up to 10 years and nine months after he ceases to be at least a half-time student to repay the loan, at 3 percent interest. Portions of the loan may be cancelled if the borrower becomes a teacher. Repayment may be deferred while he is on active duty in the armed forces, Peace Corps, or VISTA.

State student loans. Residents of Wisconsin may borrow from the State of Wisconsin student loan program. These loans are from funds established by the state, and are administered jointly by the institution the student is attending and the State Higher Educational Aids Board. An undergraduate student may borrow up to $1,000 per year and has up to 10 years and nine months after he leaves school to repay the loan, at 7 percent interest. Deferments of up to three years may be obtained for active duty with the armed forces or the Peace Corps.

Wisconsin guaranteed loan program. Residents of Wisconsin may also borrow from the Wisconsin guaranteed student loan program established in August of 1967. Loans under this program come from participating private lending institutions, such as banks, savings and loan associations, and credit unions. The program is administered jointly by the private lending institutions, the Wisconsin Higher Education Corporation (a subsidiary of the Wisconsin State Higher Educational Aids Board, 115 West Wilson Street, Madison, Wisconsin 53703) and the University.

Depending upon the total amount borrowed, the student has up to 10 years to repay the loan, at 7 percent interest, after he has permanently left school. The undergraduate may borrow up to $1,000 per fiscal year with an additional $250 per summer session. Maximum accumulation of loans, including summer session installments, is $5,000.

Commercial lenders must sign an agreement with the state corporation to participate in the program. Not all institutions are active in this program, but the number is constantly increasing.

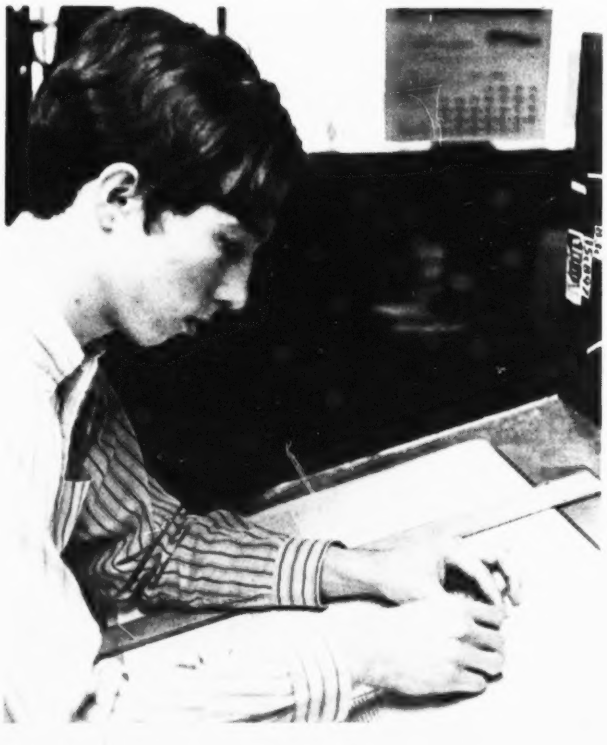
University short-term student loans. These loans are made from funds established by gifts to the University and are generally granted only to full-time students in amounts up to $300 per academic year. Repayment usually is expected by the beginning of the next academic year, and summer earnings are pledged for that purpose. Interest rates vary, but the average is 2 to 3 percent per year.

Other loan funds. Many individuals and foundations have established private loan funds to assist worthy students. A list may be obtained from the Office of Student Affairs at any of the campuses. Most states also have programs similar to the Wisconsin guaranteed loan program. Their addresses may be obtained from the Department of Public Instruction or the appropriate Office of Student Affairs. Loans for Wisconsin veterans of World War II and the Korean conflict are available from the Department of Veterans Affairs, 12A South State Capitol, Madison, Wisconsin 53702.

Veterans Educational Assistance program. The primary source of information for all programs administered by the Veterans Administration or the Wisconsin Department of Veterans' Affairs is the Veterans' Service officer of the county from which the veteran departed for service, or where he now claims residence. He may also seek assistance from the Office of Student Affairs.

War Orphans Educational Assistance. The War Orphans Educational Assistance Act has been amended to provide educational benefits for children of permanently disabled veterans, as well as children of deceased veterans. The veteran must have died or become disabled as a result of service in the armed forces during the Spanish-American War, World War I, or since September 15, 1940. A student who thinks he may be eligible for such financial assistance should write or call his county Veterans' Service office.

Student employment. All enrolled students and their spouses are eligible to use the employment services of the Office of Student Financial Aids. The student may apply any time during the year but he cannot be referred to a job opening until he arrives on campus.



Many students work on the UWGB campuses and others work in the surrounding communities. In addition, federal funds are available under the work-study program for the employment of full-time students who have substantial financial need. For this reason there is ample opportunity for student employment. Students generally are able to earn from $400 to $700 during the academic year.

Most academically able students can carry a full load of coursework while holding a part-time job (i.e. 12 to 15 hours a week) without undue strain. Many students find they earn better grades while working part time than when they are not working because they budget their time more wisely.

While previous work experience is taken into account, the possession of needed skills is even more important. The student who has skills such as typing, shorthand, keypunching, bookkeeping, drafting, carpentry, or painting, or who knows something about mechanics, photography, laboratory work, sales, or janitorial work, will have a much easier time finding a part-time position. The rate of pay for student jobs on and off campus generally ranges from $1.60 to $2.50 an hour. The exact rate depends on the complexity of the job. The chart below shows possible expected earnings (before taxes and other deductions) in a school year of about 34 weeks:

Hours worked weekly	$1.60/hour	$1.75/hour
10	$544	$595
12	$653	$714
15	$816	$893

Financial Aid Counseling

Special counseling is available to all students applying for financial assistance at UWGB before and after admission. Financial counseling is also available for married students or those planning marriage. Students who have special problems or questions regarding financial aids are encouraged to make use of this service.

Descriptive List of Courses

COURSES

The following section gives descriptions of all courses currently offered at The University of Wisconsin–Green Bay. The list is alphabetical, with the following categories being used for headings: theme colleges, concentrations, options, disciplines within options (listed alphabetically with the options), collaterals, Liberal Education Seminars, and January Practica. The following abbreviations are commonly used throughout:

Abbreviations

cr	credits
P	prerequisite(s)
fr	freshman
soph	sophomore
jr	junior
sr	senior
st	standing
cons inst	consent of instructor
CCC	College of Creative Communication
CCS	College of Community Sciences
CES	College of Environmental Sciences
CHB	College of Human Biology
SPS	School of Professional Studies

(The abbreviation listed with each category indicates the college or school within which it is housed.)

Courses are not normally cross-listed. Furthermore, the cross-listing of a few courses should not lead the student to conclude that other courses cannot be suitably worked into any particular major.

Prerequisites are to be considered as essentially advisory and not as firm requirements. They indicate the level of proficiency required in order to carry on a course. The student who feels he has the level of proficiency necessary without taking the suggested prerequisites should consult the instructor before enrolling. The instructor's opinion is advisory only, but should be useful in assisting the student to make a decision.

Courses in the 296-299 and 496-499 series permit individual work for all students and offer 1-4 credits as follows: 296 and 496, 1 credit; 297 and 497, 2 credits; 298 and 498, 3 credits; 299 and 499, 4 credits. Normally, a student cannot take more than one 496-499 course per semester. The instructor's advance permission is always needed. These courses must always be taken for a regular grade (not on a pass-fail basis). A maximum of 10 credits can be accumulated in 296-299 and 496-499 courses. The student should consult with his adviser for specific information about these courses.

ADMINISTRATION: DISTRIBUTION (SPS)

302 Principles of Distribution 3 cr.
An introduction to marketing and advertising goods and services from the standpoints of seller and buyer. P: jr st.

305 Theory and Practice in Public Relations 3 cr.
External relations of the business enterprise or governmental unit; attitudes and actions of the public and how they affect internal relations and conduct of the unit.

310 Transportation and Purchasing 3 cr.
Economic analysis of the costs of transportation and their effects on economic development, location, and marketing; relationships with price policies; principles of procurement of materials and goods by industry and government: sources, specifications, quality and price, internal control.

402 Retailing and Wholesaling 3 cr.
Management practices in the operation of retail and wholesale enterprises; merchandising, promotion, role of the buyer, inventory control. P: Distribution 302, sr st.

403 Principles of Advertising 3 cr.
Types of advertising and their characteristics; planning, execution, and auditing of advertising campaigns. P: Distribution 302.

404 Marketing Research 3 cr.
The techniques of securing information about marketing problems and analyzing them; securing

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data from primary sources, including shelf inventory sampling; keying advertising to sales.

407 International Distribution and Marketing 3 cr.
The structure of foreign trade; facilities available to exporters and importers; cross-cultural and economic analysis in marketing decisions; contemporary trends in international economic affairs. P: Distribution 302 and Economics 403.

410 Applied Motivational Research 3 cr.
Studies and cases in the motivation of buyers and sellers, consumers and categories of publics. P: Distribution 302 and Psychology 335.

ADMINISTRATION: FINANCE (SPS)

302 Money and Banking 3 cr.
Monetary and banking principles and practices; price theories; banking systems and their operation. P: jr st and Economics 202.

303 Corporation Finance 3 cr.
Organization for management of finance of business units; management of fixed and working capital; short- and long-range financial planning; money and capital markets; expansion of income administration; failure; reorganization. P: Organization and Operations 203.

305 Principles of Risk Management 3 cr.
The theory of probability applied to risk management; techniques and bases for decision making in management of business and personal risks. P: jr st. A course in social science statistics is recommended.

306 Public Finance and Fiscal Policy 3 cr.
The theory and practice of public finance: revenues, primarily taxes; budget, expenditures, public debt, fiscal policy. P: jr st.

402 Problems of Investment 3 cr.
Principles underlying the construction and management of investment portfolios; meeting investment needs of personal and institutional investors; reducing investment risks inherent in selection; inflation, depression and money market fluctuations. P: Finance 305.

403 Financial Planning and Control 3 cr.
Money management; anticipation of cash flow and cash needs; relation of capital management to work production and asset management. P: Finance 305.

405 International Finance 3 cr.
Theory and recent experience in currency standards, international banking, exchange fluctuations and exchange controls; international monetary cooperation and special topics. P: Economics 403.

ADMINISTRATION: LABOR RELATIONS (SPS)

302 Personnel Administration in Business 3 cr.
The functions of personnel management: recruitment, staffing, training, safety, wage policy, and fringe benefits. P: jr st. This course may not be taken by persons who have had Labor Relations 303.

303 Personnel Administration in Government 3 cr.
A counterpart course to Labor Relations 302, but emphasizing aspects of personnel management unique to government service: the problem of patronage, civil service rules and regulations, written examinations for recruitment. P: jr st. This course may not be taken by persons who have had Labor Relations 302.

310 Labor Unions in America 3 cr.
The history and development of labor unions in private business and in government service: present status of unionization. P: jr st. (Or may be taken as Political Science 310.)

312 Collective Bargaining 3 cr.
Cases on techniques and problems in dealings between organized employees and their employers; industry-wide collective bargaining; constraints in the public service; administration of collective bargaining agreements. P: Labor Relations 310 or cons inst.

402 Problems in Labor Relations 3 cr.
Treats basic problems such as industrial vs. craft unionism, strikes in government employment, the

role of mediation and arbitration; the efficacy of statutes governing organized relations. Does not include cases in collective bargaining. P: Labor Relations 312.

403 Labor Legislation and Administration 3 cr.
Federal and state statutory and administrative regulation of collective dealings between employers and employees; other regulations, including workmen's compensation, unemployment compensation, social security, and labor laws respecting women and children. P: Labor Relations 310 or cons inst.

412 Cases in Collective Bargaining 3 cr.
Cases involving union recognition, type of shop, aspects of wages and hours determinations, strikes, grievance machinery, and fringe benefits. P: Labor Relations 312 and sr st.

420 International Labor Relations 3 cr.
Comparative labor relations in industrialized foreign countries: government regulation, labor productivity, wage rates and labor costs; relationships between labor organizations in the U.S. and the International Labor Organization. P: Labor Relations 312.

ADMINISTRATION: ORGANIZATION AND OPERATIONS (SPS)

202 Business and Its Environment 3 cr.
The interaction of environmental factors with American business, including social, political, and economic systems; the development of business practices and institutions. The first semester of the introductory course is required of all business and public administration majors.

203 Government and Business 3 cr.
Relations of businessmen and business firms with the levels of government: local, state, and national; corporations and bureaucracies as institutions, their similarities and differences; brief treatment of government regulation of business and business determinants of government policy. The second semester of the introductory course for majors in business and public administration. P: soph st.; Organization and Operations 202.

302 Principles of Organization and Operation 3 cr.
Principles underlying the subdivision and specialization of productive work; problems arising from line and staff functions and geographical decentralization; changing work demands; flow of information; means of control; adapting to new requirements. P: Organization and Operations 203, or concurrent registration.

304 Industrial Management 3 cr.
The management of physical and human resources in the production and operations functions for producing goods or providing services in manufacturing and processing enterprises. P: jr st.

310 Small Business Management in the Northern Great Lakes Region 3 cr.
Case studies leading to the development of principles concerning the operation of small businesses; cases drawn from the Northern Great Lakes region. Course draws upon all phases of business management at the level of simplification suitable to enterprises of limited size and staff. P: jr st.

320 Practice of Public Administration 3 cr.
The management of physical and human resources in the execution of public policy, relationship between policy determination and policy administration; leadership, control, and accountability. P: jr st. (Or may be taken as Political Science 320.)

402 Planning, Control, and Routinization 3 cr.
The ongoing process of an administrative organization in operation: job analyses, routinization of procedures; handling variations in work load; standing orders; translating control information into planning terms. P: jr st.

491, 492 Problems of Business Management I, II 3, 3 cr.
The capstone undergraduate course in business administration; conducted on the case system, utilizing principles and techniques in all the fields of business administration. Open to seniors in business administration, and to others only with

cons inst. Must be taken in sequence except by cons inst.

493, 494 Problems of Public Management I, II 3, 3 cr.
The capstone undergraduate course in public administration; conducted on the case system, utilizing principles and techniques in all the fields of public administration. Open to seniors in public administration and to others only with cons inst. Must be taken in sequence except by cons inst.

496, 497, 498, 499 Special Readings in Administration 1-4 cr.
A reading course adapted to the individual's particular interests in the field of administration. P: jr st and cons inst.

ADMINISTRATION: QUANTITATIVE METHODS (SPS)

204 Introductory Accounting 3 cr.
Fundamental principles of accounting; basic business terminology, techniques and practices, books and accounts, and statements for retailing and wholesaling concerns; treatment and presentation of sole proprietorship, partnership, and introductory corporation accounts. Open to second semester fr; soph st recommended.

205 Intermediate Accounting 3 cr.
Accounting theory, principles, concepts, and procedures as they apply to balance sheet and income statement accounts; presentation and interpretation of financial reports, including the problems of terminology, manufacturing valuation, and analysis. P: Quantitative Methods 204.

206 Accounting for Administrators 3 cr.
Accounting concepts and methods; interpretation and use of accounting reports and analyses for the managerial purposes of planning, coordination, and control. P: Quantitative Methods 204 or jr st.

230 Quantitative Methods in Administration 3 cr.
Studies of the origin, processing, use, and interpretation of accounting, statistical and other computerized data in administrative organizations; application of techniques of accounting and financial analysis to reporting, planning, and controlling. P: soph st.

302 Cost Accounting 3 cr.
Problems of accounting for costs in administrative organizations; structural aspects, working knowledge, and techniques for solving cost problems. P: Quantitative Methods 204, 205 or 230.

303 Financial Accounting, Theory, and Practice I 3 cr.
The analysis of accounting problems, methods of problem solving, specialized and technical subject matter for majors in accounting; accounting for installment sales and consignments, reorganizations, bankruptcy and equity receivership; estates, personal trusts, and partnerships. P: Quantitative Methods 205 or 302.

304 Financial Accounting, Theory, and Practice II 3 cr.
Specialized and technical subject matter for majors in accounting; home office and branches, preparation and interpretation of consolidated statement and foreign exchange. P: Quantitative Methods 303.

310 Governmental and Institutional Accounting 3 cr.
Accounting theory and practice unique to governmental and institutional jurisdictions; control of revenues and expenditures through budgets and allotments; comparison with commercial accounting, including nature and purpose of separate funds. P: Quantitative Methods 303.

315, 316 Business Law I, II 3, 3 cr.
Contracts, agency, negotiable instruments, sales, property, partnerships, corporations, bankruptcy law. P: jr st. May be taken in sequence, in reverse order, or independently.

403, 404 Auditing Standards and Procedures I, II 3, 3 cr.
First semester: auditing standards and procedures; review and evaluation of internal control;

examination and reporting; short cases and problems. Second semester: advanced cases covering the various audit points and procedures; readings, problems, and cases on statistical sampling, electronic data processing, systems auditing; SEC requirements. P: Quantitative Methods 230 and 303. Must be taken in sequence.

410 Income Tax Theory and Practice 3 cr.
Federal and state income tax as applied to individuals, partnerships, and corporations; tax and raw source materials; written problems; tax planning and tax determination. P: Quantitative Methods 204 or 206.

ANTHROPOLOGY (CCS)

102 Environmental Anthropology 3 cr.
Science of human cultures in different ecological contexts; man's biological and social variability; human societies of the present and recent past around the world; man and nature interrelationships and cultural adaptability emphasizing contemporary problems of various cultures. P: Community Sciences 102.

202 Economic Anthropology 3 cr.
Production, distribution, and consumption in nonliterate societies; land tenure and personal property concepts, prestige systems, and incentives to labor. P: soph st.

203 Understanding Changing Cultures 3 cr.
Fundamental concepts and methods and their substantive applications to the changing nonliterate, peasant, and complex societies; study of cultural processes of innovation, transculturation, drift, modernization, secularization, and integration. P: soph st.

204 Technological Change and Cultural Patterns 3 cr.
Introduction to anthropological analyses of contemporary cases relating to human problems resulting from cultural change; emphasis on modernization problems and processes of cultures in developed and underdeveloped countries. P: soph st.

206 Anthropological Perspectives on Population Problems 3 cr.
Evaluation of sociocultural factors influencing growth and movement of rural-urban population; cultural factors in human fertility and population control; cross-cultural study of population control; evaluation and measurement of communication and motivation problems in different cultural groups. P: soph st.

302 Peoples and Cultures of the Northern Great Lakes Region 3 cr.
Description, comparison, and analysis of regional cultural and resource variations; their past and present interrelationships with development and adjustment problems of the Northern Great Lakes region. P: jr st.

303 Cultural Ecology 3 cr.
A study of interrelationships of man, nature, and culture; cultural adaptability, with regard to physiological and behavioral traits and mechanisms for human groups inhabiting different environments and spatial arrangements. P: jr st.

304 Family, Kin, and Community 3 cr.
A cross-cultural comparison of the form and function of such social institutions as marriage and the family; age, sex, and kin groups; task groups; caste and class. P: jr st.

305 Human Evolution 3 cr.
Survey of physical anthropology; evolutionary theory applied to contemporary problems of human evolution; comparisons of living and fossil primates with living and modern man in terms of human adaptability. P: jr st; Biology 203 or Anthropology 203. (Or may be taken as Human Biology 342.)

306 Prehistoric Man and His Surroundings 3 cr.
Human biological and cultural evolution, with special emphasis on prehistoric archaeology and prehistoric ecology. P: jr st.

307 Heredity, Environment, and Human Population 3 cr.
Cultural and ecological factors influencing the composition and structure of human population;

expression and distribution of genetic versus acquired characteristics within and between populations; mating systems and their genetic consequences. P: jr st or Biology 203, Anthropology 206, or sociology course at 300 level.

310 Culture and Personality 3 cr.
A critical survey of the field of culture and personality and of the principal concepts and methods used in studying the relationship of the individual to his culture. P: soph st.

402 Comparative Social Structures 3 cr.
Research procedures and theories in the cross-cultural examination of social categories, groups, and classes; their interrelationships with cultural and ecological factors. P: sr st.

403 Race and Genetic Variation of Man 3 cr.
Genetic and morphologic variations of the living races of mankind; processes of human variation; biological history of selected human populations. P: sr st or Anthropology 305. (Or may be taken as Human Biology 440.)

498 Contemporary Problems in Anthropology 3 cr.
Senior seminar or tutorial on current issues in anthropology related to methods, theories and concepts of physical and cultural anthropological analysis; their values, uses, and limitations in reference to community problems. Integrative individual projects are developed for student reading, research, and reports. P: pursuit of anthropology option. May be repeated for credit.

BIOLOGY (CHB)

202 Biology of Cells 4 cr.
Selected topics on concepts of biology at the subcellular and cellular levels. P: Human Biology 102 or cons inst.

203 Biology of Organisms 4 cr.
Selected topics on concepts of biology at the level of the organism. P: Biology 202.

302 History of Biology 3 cr.
History of ideas, concepts and discoveries in the life sciences. P: Biology 203.

303 Genetics 3 cr.
Mechanisms of heredity and variation, their cytological basis and their implications in biology. P: Biology 203.

325 Biological Instrumentation 3 cr.
Laboratory exercises with instruments useful in biological investigations. P: Biology 203 and Physics 305.

BIOLOGY: BOTANY (CHB)

240 Plants and Civilization 2 cr.
The economic importance of plants in the development of civilization and in modern agriculture and industry. Emphasis is on historical and modern cultural aspects.

309 Plant Taxonomy 3 cr.
A laboratory, field and discussion course in identification and classification of plants of North America including flora of Wisconsin. P: Biology 203.

310 Systematics and Taxonomy 3 cr.
A consideration of the historical background of systematics, modern systems of analysis, the experimental approach to systematic problems and interrelations with other fields. P: Biology 203.

320 Field Botany 3 cr.
Special consideration is given to the collection, preservation, identification and natural history of plants indigenous to Northeastern Wisconsin. Each student will conduct a field study. P: Biology 203.

350 Plant Physiology 4 cr.
General physiology of vascular plants; nutrition and metabolism; plant growth and development; natural and synthetic growth regulators; transport systems. P: Biology 203 and Chemistry-Physics 112 or 212.

410 Dendrology 3 cr.
Identification of native and cultivated trees and shrubs, their economic uses, distribution, growth, reproduction, and autecology. P: Biology 203.

BIOLOGY: ECOLOGY (CES)

302 Principles of Ecology 3 cr.
The biological principles which govern the interactions of plants and animals in their physical and biotic environments. Mechanisms of evolution and the resultant physiological and behavioral adaptation of individuals to their environment. Succession, productivity, energy flow, and nutrient cycling in ecosystems. Consideration is given to man as a factor in the ecosystem and to concepts underlying strategies used in the management of natural resources. P: Biology 203.

303 Productivity of the Ecosystem 3 cr.
World food sources and production processes, components of yield, fertilizer efficiency, genetic potential, climatic control and land capability restrictions on food production; potential of aquatic and microbial food sources. P: Biology 203.

310 Plant Ecology 3 cr.
Interrelations of plant populations with the physical and biological factors of the environment; detection and description of pattern in the vegetation of North America and of Wisconsin. P: Ecology 302.

311 Principles of Plant Distribution 3 cr.
A study of present and past distributions of plants throughout the world and the structure of modern vegetation with emphasis on the floristic and ecological plant geography of North America. P: Biology: Botany 309 or 320.

402 Population Biology 3 cr.
The concept of the biological population density-dependent and density-independent factors regulating populations; isolation, hybridization, and migration in populations; population as the adaptive element of the ecosystem. P: Ecology 302.

403 Community Biology 3 cr.
The nature, structure, and dynamics of the biological community. P: Ecology 402.

410 Principles of Human Ecology 3 cr.
Application of principles of animal ecology to human biology; elements of habitat, development and individuality of man, morphological adaptations, and physiological, behavioral and social adjustments to environment; regulation of populations and control of environmental factors. P: Earth Science 202 and Ecology 302.

420 Landscape Ecology 3 cr.
Problems of multiple use of landscapes.
P: Ecology 302.

430 Elements of Biometeorology 3 cr.
The influence of the atmospheric environment on plants and animals; adjustments and adaptations made by organisms to changes in atmospheric environment. P: Ecology 302 and Physics 350.

BIOLOGY: ENTOMOLOGY (CHB)

302 Principles of Entomology 3 cr.
The biology and habits of insects and their interrelationships with man. This course includes general anatomy, physiology, embryology, and classification of insects. Field collection is required. P: Biology 203.

310 Taxonomy of Insects 3 cr.
The principles of insect taxonomy with identification and morphology of mature and immature insects. P: Entomology 302.

330 Insect Physiology 3 cr.
The basic physiology and histology of organ systems of insects; integration of the nervous systems and the behavior of insects.
P: Entomology 302.

BIOLOGY: MICROBIOLOGY (CHB)

302 Principles of Microbiology 4 cr.
A study of microorganisms and their activities. Included is their form, structure, reproductive physiology, metabolism, and identification; their distribution in nature and relationship to each other and to other living things. P: Biology 202 and Chemistry 108 or Chemistry-Physics 110.

303 Advanced Microbiology 3 cr.
Detailed study of microorganisms from virus to fungi in their environment. A study of both free-living and pathogenic organisms and their degrading abilities. P: Microbiology 302.

306 Mycology 3 cr.
Introduction to mycology with emphasis on morphology and taxonomy of lower and higher fungi; laboratory techniques involved in collection, isolation, culture and identification; field trips; mycological literature. P: Biology 202.

310 Microbial Physiology 3 cr.
The chemistry and physics of bacterial processes.
P: Chemistry 330 and Microbiology 302.

320 Microbial Genetics 3 cr.
The fundamental genetic principles; examples from fungi, bacteria, viruses, protozoa, and algae.
P: Microbiology 302.

402 Virology 3 or 4 cr.
The structure, composition, and replication of bacterial, plant, and animal viruses; their effects upon host cells; techniques used for studying viruses; some effects of certain pathologic viruses on selected host organisms. P: Chemistry 330 and Microbiology 303.

403 Pathogenic Microorganisms 3 cr.
The physical and chemical manifestations of diseases produced by microorganisms at the micro- and macro-level. P: Microbiology 302.

408 Forest and Plant Pathology 3 cr.
Studies of important diseases of forest, shade, and orchard trees and diseases of representative economic plants; fungus deterioration in wood storage and their economic importance with methods of control; field trips. P: Biology 203.

410 Microorganisms in Foods 4 cr.
Normal microbial flora of foods, desirable fermentations, food infections and intoxications, detection of contamination in foods. P: Chemistry 330, Nutritional Science 303 and Microbiology 302.

BIOLOGY: PHYSIOLOGY (CHB)

104 Anatomy and Physiology 4 cr.
The structure of the human body and the physiology of the organ systems. P: Chemistry 108 or Chemistry-Physics 110 and Human Biology 102 or Biology 202.

302 Comparative Physiology 3 or 4 cr.
The functional aspects of animal systems, from invertebrate to mammals, are compared at the subcellular, cellular, and organismal levels. The course includes the ecology of both internal and external environments. P: Biology 203 and Chemistry-Physics 112 or 212.

320 Kinesiology* 3 cr.
Mechanics and muscular action of balance and movement of the human body. P: Biology 203.

321 History of Study of Human Activity* 3 cr.
History of ideas, concepts and discoveries in chemistry and physiology of muscular contraction, physiology of exercise and ergonomics. P: Biology 203.

322 Fundamentals of Ergonomics* 4 cr.
Study of precision and efficiency of human activity, influence of environmental factors, the human factor in the design of equipment. P: Biology 203.

402 Mammalian Physiology 4 cr.
The study of the functions of the major organs and organ systems of mammals, application of systems analysis to physiological regulation. P: Biology 203 and Chemistry-Physics 112 or 212.

420 Exercise Physiology* 4 cr.
Study of human activity and the effects of activity on organs and organ systems; training as an adaptation, component analysis of human movement. P: Physiology 402.

430 Human Environmental Physiology 4 cr.
Effects of meteorological factors on man; acclimatization to heat, cold, altitude, and solar radiation. P: Physiology 402.

BIOLOGY: ZOOLOGY (CHB)

302 Vertebrate Zoology 3 cr.
The taxonomy, general biology, ecology, behavior and special adaptations of chordate animals. P: Biology 203.

303 Comparative Anatomy of Vertebrates 5 cr.
Lectures compare structure of organ systems in the different vertebrate groups. Laboratory dissection of shark, mud-puppy, turtle, bird, and cat. P: Biology 203.

310 Embryology 4 cr.
Principles of development including gametogenesis, fertilization, gastrulation, organogenesis, and experimental aspects of development in vertebrates. Laboratory work includes morphogenesis of amphibians, chicks and pigs, and work with living embryos. P: Biology 203.

311 Histology 3 cr.
Microscopic structure of cells, tissues and organs; growth, differentiation, and organization of tissues, their structural patterns, and functional interrelationships in animals adapted to various environments. P: Biology 203.

320 Field Zoology 3 cr.
Field collection and laboratory identification of aquatic and terrestrial invertebrates and vertebrates of the region with analysis of their structure, behavior, and habitats. A collection is required. P: Biology 203.

402 Ichthyology 3 cr.
An introduction to the major groups of fishes, their morphology, systematics, ecology and distribution. P: Biology 203.

403 General Limnology 3 cr.
An introduction to the physical, chemical, and biological interactions in lakes and streams as expressed in the nature and dynamics of aquatic communities; laboratory and field techniques used in the characterization of the aquatic environment. P: Biology 203 and Chemistry-Physics 110.

420 Principles of Parasitology 3 cr.
General biology, ecology and classification of animal parasites; adaptations of parasites to the external environment; physiology of parasites, host-parasite relationships, and immunity to parasite infection. P: Biology 203.

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*This course will not be available in 1970-71.

CHEMISTRY (CES)

108 General Chemistry 5 cr.
For students who will take only one semester of chemistry. Extra emphasis is given to organic chemistry. Does not serve as prerequisite for Chemistry-Physics 111 or 211.

110, 111, 112 Chemistry-Physics 5, 5, 5 cr.
(See Chemistry-Physics)

110, 211, 212 Chemistry-Physics 5, 5, 5 cr.
(See Chemistry-Physics)

302 Organic Chemistry I 4 cr.
The study of aliphatic and aromatic hydrocarbons and their derivatives. Structure and properties of organic compounds, mechanisms, spectroscopic studies of organic compounds, stereochemistry, saturated and unsaturated aliphatic hydrocarbons, benzene and aromatic substitution reactions, alkyl halides, alcohols, ethers, carboxylic acids, aldehydes, and ketones. Three lectures and one three-hour laboratory per week. P: Concurrent registration in Chemistry-Physics 111 or 211 or Chemistry 108 and cons inst.

303 Organic Chemistry II 4 cr.
A continuation of Chemistry 302. Aromatic compounds and their chemical reactions, amines, phenols, aryl halides, glycols and epoxides, derivatives of carboxylic acids, carbohydrates, amino acids, proteins, natural products. Three lectures and one three-hour laboratory per week. P: Chemistry 302.

313 Analytical Chemistry 4 cr.
Introduction to the theory and practice of chemical analysis. Gravimetric analysis techniques, computations, solubility products, and applications. Volumetric analysis techniques, computations, acid-base titrations, oxidation-reduction titrations, precipitation titrations, and complexometric titrations. Introduction to instrumental analysis, spectrophotometric and electroanalytical methods. Two lectures and two three-hour laboratories per week. P: Concurrent registration in Chemistry-Physics 112 or 212.

315 Nuclear and Radiochemistry 4 cr.
An introduction to the properties and reactions of atomic nuclei; the application of the properties of the radioactive nuclei to the solution of chemical and biological problems. P: Chemistry-Physics 212 or cons inst.

320 Thermodynamics and Kinetic Theory
(See Chemistry-Physics 320)

321 Physical Chemistry 4 cr.
Properties of gases, liquids, and solids; solutions, chemical kinetics, electrochemistry, atomic and molecular structure. P: Chemistry 320.

330 Biochemistry 4 cr.
Nature and function of the important constituents of living matter, their biosynthesis and degradation. Energy transformation, protein synthesis and metabolic control. P: Biology 202, Chemistry-Physics 112, and Chemistry 302.

340 Energy Metabolism 4 cr.
The concept of energy balance; measurement of energy exchanges by the living organism; regulation of energy balances; variations of energy exchange associated with age, sex, activity, and environmental factors. P: Chemistry 330.

410 Inorganic Chemistry 4 cr.
A survey of the elements and their relationships to atomic structure, principles of chemical bonding and their application to inorganic stereochemistry and complex compounds; theory of acids and bases; non-aqueous solvent systems. Preparation of various inorganic compounds will be undertaken in laboratory. P: Chemistry 321.

413 Instrumental Analysis 4 cr.
A survey of the theory and practice of analysis by instrumental methods including methods based on absorption and emission of radiation, electroanalytical methods, chromatographic methods, and radiochemical methods. P: Chemistry 313 and 321.

420 Mineral Metabolism 3 cr.
Metabolic role, significance and distribution of mineral elements in biological systems; interrela-

tionships in soil or aquatic plant-animal associations; the role of chelation as a fundamental chemical reaction in biological and certain physical systems. P: Biology 203 and Chemistry 330.

421 Vitamins and Hormones 2 cr.
Chemistry of vitamins and hormones and their role in biology; normal requirements, metabolic disturbances caused by vitamin and hormonal deficiencies. P: Chemistry 330.

422 Protein Chemistry 3 cr.
Chemistry and structure of proteins and amino acids; protein synthesis and metabolism, role of nucleic acids. P: Chemistry 330.

430 Environmental Biochemistry 4 cr.
Transformation of carbon, nitrogen, phosphorus, sulfur and certain trace elements in soil-water-atmosphere systems; beneficial and toxic effects on plant and animal life; role in pollution of the environment; transformations and removal in waste disposal systems. P: Biology 202, Earth Science 202, and Chemistry 302.

441 Air Chemistry 4 cr.
The nature, composition and chemical reactions occurring in the several regions of the atmosphere. Transformations of nitrogen, sulfur and carbon compounds in the troposphere and their relationship to human uses of the atmosphere will receive special attention. P: Chemistry 313, 315, and Physics 350.

442 Water Chemistry 4 cr.
Study of fresh and ground water, chemical composition, chemical reactions and physical principles which control or affect solute content of natural waters. Analytical and sampling techniques used to study natural waters. Three one-hour lectures and one three-hour laboratory per week. P: Chemistry 313.

443 Soil Chemistry 4 cr.
Fundamental principles of the structure and chemical behavior of clay minerals; reactions of soil colloids; soil pH and redox potentials; chemical reactions occurring in soils and their significance in the growth and nutrition of plants and on the quality of surface and ground waters. P: Chemistry 313, Chemistry-Physics 321, and Earth Science 320.

CHEMISTRY-PHYSICS (CES)

110 Chemistry-Physics 5 cr.
Concepts and language of physical science, chemical changes, elementary laws of mechanics, atomic theory, chemical bonding, and the states and structure of matter. P: Concurrent registration in Mathematics 112 and 113.

111 Chemistry-Physics 5 cr.
Thermodynamics, chemical kinetics and chemical equilibria, motion, system of forces, gravitation, mechanics of fluids, oscillations, wave of motion, sound, and geometrical and physical optics. Students intending to pursue concentrations in the Colleges of Environmental Sciences or options in engineering, chemistry, or physics must take Chemistry-Physics 211 and 212. P: Chemistry-Physics 110 or cons inst.

112 Chemistry-Physics 5 cr.
Electricity and magnetism, chemical and physical properties of selected elements and compounds, nuclear physics and radio chemistry, modern physics topics, and selected integrated topics. Students intending to pursue concentrations in the Colleges of Environmental Sciences or options in engineering, chemistry, or physics must take Chemistry-Physics 211 and 212. P: Chemistry-Physics 111.

211 Chemistry-Physics 5 cr.
Thermodynamics, chemical kinetics and chemical equilibria, motion, systems of forces, oscillations, gravitation, and mechanics of fluids. P: Chemistry-Physics 110; concurrent registration in Mathematics 202. Recommended for students pursuing concentrations in the Colleges of Environmental Sciences and Human Biology or options in biology, earth science, engineering, chemistry, mathematics, or physics and those preparing for graduate studies in the natural sciences.

212 Chemistry-Physics 5 cr.
Wave motion, sound, geometrical and physical optics, electricity and magnetism, chemical and physical properties of selected elements and compounds, nuclear physics, radio chemistry, and selected integrated topics. Recommended for students pursuing concentrations in the Colleges of Environmental Sciences and Human Biology or options in biology, earth science, engineering, chemistry, mathematics, or physics or those preparing for graduate studies in the natural sciences. P: Chemistry-Physics 211 and concurrent registration in Mathematics 203.

320 Thermodynamics and Kinetic Theory 3-4 cr.
Temperature, heat and work; thermodynamic properties of gases, solids, and solutions; homogeneous and heterogeneous equilibria; thermodynamics of electrical-chemical cells; kinetic theory; statistical thermodynamics; the calculation of thermodynamic properties of substances. P: Chemistry-Physics 212 or Chemistry-Physics 112 and Mathematics 203.

COMMUNICATION ARTS AND SCIENCES (CCC)

102 Fundamentals of Public Speaking 3 cr.
The principles of preparing and presenting effective public messages; application of these principles in the analysis of contemporary speeches and in the presentation and critique of student speeches. Open to freshmen; not open to those who have had a fundamental course in public speaking.

262 Argumentation and Debate 3 cr.
The theory of argument, with practice in the preparation and delivery of various types of argumentative speeches and debates. P: soph st and Communication Arts and Sciences 102.

266 Theory and Practice of Group Discussion 3 cr.
The structure and dynamics of small group decision-making, includes critical and creative problems in group interaction processes.
P: soph st and Communication Arts and Sciences 102.

302, 303 Creative Writing 3, 3 cr.
A course in the study and practice of writing poetry, fiction, drama. The genre for any given semester is at the option of the instructor.
May be taken for performing arts credit when the drama is selected as the major genre to be studied.

496, 497, 498, 499 Problems of Literature and Language 1-4 cr.
An opportunity for advanced students to pursue individual problems in the communication arts and sciences. Course may be offered as seminar or tutorial.

COMMUNITY SCIENCES (CCS)

102 Man and His Social Environment 3 cr.
Introduction to concepts and concerns of the community sciences through an interdisciplinary focus on problems and opportunities of man and his social and cultural environment.

202 Introduction to Regional Analysis 3 cr.
Study of the community sciences through an identification of the physical, economic, political, social, and cultural interactions and problems of regions; concepts for identifying or defining functional regions; evaluation of selected problems and opportunities of regions, contrasting the Northern Great Lakes region with other relevant regions. P: soph st.

203 Introduction to Urban Analysis 3 cr.
Study of the community sciences through an examination of the physical, economic, political, social, and cultural interactions within urban and urbanizing areas; concepts for evaluation of selected problems and opportunities of urban and urbanizing areas. P: soph st.

204 Introduction to Modernization Processes 3 cr.
Study of the community sciences through an examination of those economic, political, social, and cultural factors that bring about changes in various communities within which men live; changes in institutional arrangements and behavior patterns, particularly in regard to tech-

nology, value systems, and economic, political, and social systems that are a central part of the modernization processes. P: soph st.

205 Social Science Statistics 3 cr.
Course in application of statistics to problems of the social sciences, particularly those problems pertaining to regional analysis, urban analysis, and modernization processes. Application of statistical techniques in problem definition, hypotheses construction, and data collection, processing, and evaluation. P: soph st.

498 Community Sciences Special Readings 3 cr.
Special readings on the role of man in his social and cultural environment; community problems and opportunities at the local, state, national, and international levels; possible contributions and interdependencies of disciplines. P: soph st. May be repeated for credit.

CREATIVE COMMUNICATION (CCC)

102 Gateway to Human Identities 3 cr.
The concept of human identity is presented from the vantage point of many disciplines; the contributions of science and art and their mutual interaction is demonstrated.

204 Introduction to Creativity 3 cr.
An introduction to the problems of artistic expression with reference to problems of creative efforts in the literary, performing, and visual arts.

205 Principles of Expression 3 cr.
A consideration of the evolution of aesthetic theory; selections from Vasari, Wolflin, Burkhardt, Symonds, Ruskin, Dewey, Bell, Croce, and others.

371-372 Introduction to the Man-Made Environment 3, 3 cr.
An introduction and survey of the development of artistic forms, two- and three-dimensional, which reflect and influence the social conditions within which these forms are created. Particular attention is paid to ways in which such artistic expressions influence the responses of men to their environment.

EARTH SCIENCE (CES)

202 The Earth's Physical Environment 4 cr.
The materials and processes that have determined and are now modifying the physical features of the earth's environment are described and analyzed. Lecture, laboratory, and field trips. P: Environmental Sciences 102.

302 Geologic Evolution of the Earth 4 cr.
The physical history of the earth during geologic time, and the history of plants and animals with particular emphasis given to the adaptations made by earlier life forms to the changing conditions of the physical environment. Lectures, laboratory applications, and field trips. P: Earth Science 202 or cons inst.

303 Conservation of Natural Resources 3 cr.
Principles of conservation, including: the nature and extent of our natural resources, exploitation and conservation of our resource system as well as the chemical, physical, and biological processes occurring in nature which affect and influence our conservation and management practices. Consideration is given to the politics and economics of resource conservation. Field trips. P: Environmental Sciences 102.

304 Descriptive Astronomy 3 cr.
A survey of the universe around us; a study of the earth, the moon, planets, the sun, stars, and galaxies. P: Mathematics 112 or equivalent knowledge of algebra.

310 Paleobiology 4 cr.
Descriptions will be made of the plants and animals that contribute to the many life assemblages in the earth's ancient environments and of the relationship of the biota to the varied facets of the physical-chemical environment. Lecture and laboratory studies of fossils. Local field trips. P: Earth Science 302 or cons inst.

320 The Soil Environment 3 or 4 cr.
The physical, chemical, and biological properties of soil. Formation, classification, and distribution of major soil orders. Influence of soil on agricultural, engineering, urban, and water

systems. Field trip. P: Chemistry 108 or Chemistry-Physics 110; Earth Science 202 recommended.

330 Surface and Ground Water 3 cr.
The hydrologic phenomena of watersheds concerned with the water balance, floods and sedimentation; management and development of watersheds for controlled water yields; natural and artificial ground water recharge; efficient use of available water resources. P: Earth Science 202 and 320.

331 Elements of Marine Science 3 cr.
An introduction to the nature and extent of the oceans, including chemical and physical processes, plant and animal life in the seas, and seasonal cycles. P: Biology 203, Chemistry 108 or Chemistry-Physics 110, and Earth Science 202.

340 Minerals, Rocks, and Mineral Resources 3 cr.
The descriptions and the classifications of the most important rock-forming minerals and the most commonly occurring rocks are presented. The uses made of these components of the earth's physical environment will be emphasized. Lecture, laboratories, and local field trips. P: Earth Science 202 or cons inst.

350 Field Geology 4 cr.
Application of standard geologic mapping methods to the field study of selected areas. Collection of materials for laboratory analysis will be related to mapping techniques. P: Earth Science 202 and cons inst.

360 Structure of the Earth's Crust 4 cr.
The description and the genesis of the primary and secondary structures of the rocks of the earth's crust will be presented. Local field trips, as well as one or two week-end field trips will be scheduled to provide the student with opportunities to apply in the field the principles learned in the classroom and laboratory. P: Earth Science 302.

420 Soil Ecology and Geography 3 cr.
Influence of major environmental and biological factors on soil morphology; classification systems and world geographical distribution of soils; interrelationships of soil ecology with plant and human ecology. P: Earth Science 202 and Environmental Sciences 102 or cons inst.

430 Hydrology 3 cr.
Major physical processes relating to water as it moves from the atmosphere, over and through the earth, is discharged to the oceans, and returned to the atmosphere. P: Physics 340 or 440.

431 Water Pollution 4 cr.
Physical, chemical, and biological factors affecting water quality; problems in maintaining water quality in agricultural, industrial, urban, and wildland areas; waste water treatment and natural purification. P: Chemistry 430 and 442.

441 Earth Resources I: Minerals 4 cr.
Knowledge of the relationship of mineral structures to energy distribution provides a framework for carrying the study of minerals beyond chemical classification. The relationship of crystallography to minerals; description of the principal rock-forming and ore minerals; recognition of minerals in hand specimens. P: Chemistry-Physics 112 and Earth Science 202.

442 Earth Resources II: Rocks 4 cr.
Study of igneous, sedimentary and metamorphic rocks related to classification, genesis, and distribution; introduction to optical methods of identification; identification of hand specimens and field occurrences. P: Earth Science 341.

470 Geomorphology of the Great Lakes Region 3 cr.
Variations in landform patterns have strongly influenced the patterns of human distribution, especially the development of urban centers and surface transportation. The glacial history of the Great Lakes region is viewed in relation to general geomorphology, with consideration of the influence of preglacial geomorphic features on the glacial land forms. Principles of geomorphic processes, analysis of land forms, application to regional analysis. Field trips. P: Earth Science 202 and 302.

ECONOMICS (CCS)

102 Economics and the Modern World 3 cr.
An introductory study of the economic system; economic institutions; economic growth; comparative economic systems. P: Community Sciences 102.

202 Macro Economic Analysis 3 cr.
An introduction to analysis of behavior of the economy and its components; national accounts; flow of funds, money, and credit; government operation; business fluctuations; economic growth; concepts of aggregative economic analysis. P: soph st, Economics 102, or cons inst.

203 Micro Economic Analysis 3 cr.
An introduction to analysis of behavior and economic problems of individuals, firms, industries, and markets; concepts of equilibria; output, product, and factor prices; income distribution in competitive and noncompetitive systems. P: soph st, Economics 102, or cons inst.

204 Regional Economic Analysis 3 cr.
Introduction to basic concepts and problems in the economic study of sub-regions of an economy, in both an intraregional and interregional context; problems in regional analysis, economic concepts regarding location and spatial organization; economic concepts regarding planning for regional development. P: Economics 202.

205 Comparative Economic Systems and Institutions 3 cr.
Analysis of contemporary functioning of different economic systems and institutions; comparison of principles of operation, social conditions, and objectives; role and function of cooperatives. P: soph st.

302 Money and Banking 3 cr.
Monetary and banking principles and practices; price theories; banking systems and their operation. P: jr st and Economics 202.

303 Money, Income and Prices 3 cr.
Monetary standards, the value of money, monetary equilibrium; employment, output, and prices; monetary policy and public finance. P: jr st and Economics 302.

304 Contemporary Labor Markets 3 cr.
Labor supply, demand and wages; labor force, unemployment and underemployment; labor mobility, functioning of the labor markets; problems of labor and management and their interrelationships with government. P: jr st and Economics 202 and 203.

305 Natural Resources Economic Policy 3 cr.
Acquaints the student with policies leading to public, private, and public-private arrangements for the development, management, and use of natural resources; their physical and economic classifications, physical and economic feasibility, benefits and costs, external effects. P: jr st.

306 Public Finance and Fiscal Policy 3 cr.
Effects of government spending and taxation on resources, incomes, prices, and employment; major taxes employed at national, state, and local levels; current policy problems. P: jr st and Economics 202 and 203.

307 Sources of Contemporary Economics Concepts 3 cr.
The development of contemporary economic thought, drawing upon contributions from the mercantilist period to the present, emphasizing contributions of major schools of thought. P: jr st.

308 Business Cycles 3 cr.
Description and recent history of business cycles; leading explanations of the levels of employment, output, and prices; savings and investments, forecasting, governmental policy. P: jr st and Economics 202 and 203.

309 Introduction to Quantitative Economics 3 cr.
Introduction to the estimation of economic relationships, including simulation and operations research. P: Community Sciences 205.

402 Resource Economics Analysis 3 cr.
Study and use of the tools and concepts of

economic analysis in resource decision-making; concepts of joint production and joint costs, externalities; public finance, introduction to welfare economics; capital theory and discount rates, cost-benefit analysis and rates of return. P: jr st and Economics 202 and 203.

403 International Trade 3 cr.
Theory and concepts in development of international trade and finance; contemporary conditions and major current problems in international economic relations. P: jr st and Economics 202.

404 Economics of Developing Areas 3 cr.
Social and economic factors underlying economic development; leading issues in growth theory; comparative rates of progress in different countries. P: sr st and Economics 202.

405 International Finance 3 cr.
Theory and recent experience in currency standards, international banking, exchange fluctuations, and exchange controls; international monetary cooperation and special topics. P: Economics 403.

498 Contemporary Problems in Economics 3 cr.
Senior seminar or tutorial on selected topics and current issues in economics related to concerns with business, industrial, and labor economics; economic theory; international economics; public finance; resource economics. Course includes the values, uses, and limitations of economic concepts to community problems. Integrative individual projects are developed for student reading, research, and reports. P: pursuit of an economics option. May be repeated for credit.

EDUCATION (SPS)

302 Elementary School Teaching Methods in Social Studies 3 cr.
Teaching methods in the social studies in the elementary school. Required for an elementary school teacher's license in Wisconsin. P: jr st.

303 Elementary School Teaching Methods in Art 2 cr.
Teaching methods in art. Required for an elementary school teacher's license in Wisconsin. P: jr st.

304 Elementary School Teaching Methods in Music 2 cr.
Teaching methods in music. Required for an elementary school teacher's license in Wisconsin. P: jr st.

305 Elementary School Teaching Methods in Mathematics and Science 4 cr.
Teaching methods in mathematics and science. Required for an elementary school teacher's license in Wisconsin. P: jr st.

306 Elementary School Teaching Methods in Physical Education 2 cr.
Teaching methods in physical education. Required for an elementary school teacher's license in Wisconsin. P: jr st.

307 The Teaching of Reading 3 cr.
Teaching methods in reading. Required for an elementary school teacher's license in Wisconsin. P: jr st.

310 Teaching Methods in English 3 cr.
For students who wish to be licensed in Wisconsin for the teaching of English in secondary schools. P: jr st.

311 Teaching Methods in Foreign Languages 3 cr.
For students who wish to be licensed in Wisconsin for the teaching of foreign languages in secondary schools. P: jr st.

312 Teaching Methods in Social Studies 3 cr.
For students who wish to be licensed in Wisconsin to teach one or more of the social studies in secondary schools. Fields included are history, political science, economics, geography, psychology, sociology, social problems, civics (citizenship), and other social studies. This course is required for every field of social studies licensure. P: jr st.

313 Teaching Methods in Mathematics 3 cr.
For students who wish to be licensed to teach mathematics in Wisconsin secondary schools. P: jr st.

314 Teaching Methods in the Sciences 3 cr.
For students who wish to be licensed to teach chemistry, physics, biology, or earth science in Wisconsin secondary schools. Appropriate differentiations are provided for the teaching of the several disciplines. P: jr st and appropriate courses in science.

316 Teaching Methods in Art 2 cr.
For students who wish to be licensed to teach art in Wisconsin secondary schools. Appropriate differentiations are provided for the needs of students according to the art medium selected. P: jr st and appropriate courses in art.

317 Teaching Methods in Music 2 cr.
For students who wish to be licensed to teach instrumental music, vocal music, or both in Wisconsin secondary schools. P: jr st and the appropriate courses in music.

402 Practice Teaching in the Elementary School 8 cr.
Supervised practice teaching in the elementary school. Student teachers meet periodically as a group with the supervisor of practice teaching and in seminar with each other. Required for a teacher's license. P: a 300-level course in education. Preregistration is required.

403 Practice Teaching in the Secondary School 8 cr.
Supervised practice teaching in the secondary school. Student teachers meet periodically as a group with the supervisor of practice teaching and in seminar with each other. Required for a teacher's license. P: a 300-level course in education. Preregistration is required.

404 Creative Learning in the Elementary School 3 cr.
Study of systems of instruction which foster creativity within the school. Simulation of learning experiences, systems of discovery-centered questions, and individual approaches to learning in the several subject matter areas are explored. P: jr st.

405 Individualizing Instruction 3 cr.
Development of instructional systems, continuous monitoring of achievement, analysis of achievement data, and prescription of learning activities consistent with past learning profiles; development of criteria for assigning learning tasks and construction of specific performance objectives. P: jr st.

406 Evaluation Systems 3 cr.
Techniques for construction of tests and measurement systems, statistical procedures applied to rational data, monitoring and assessment of individual and group learning situations, comparison of samples, techniques and populations. Basic random and stratified sampling techniques applied to in-school evaluation.

407 Instructional Management 3 cr.
Evaluation of teacher performance, utilization of instructional consultants, differential compensation of staff, management of diagnostic data, leadership and group dynamics as applied to school settings. Development of leadership techniques and instructional units.

408 Instructional Planning 3 cr.
Planning group instructional sequences, role differentiation, utilization of specialists and consultants, and development of techniques of group behavior; evaluation, diagnostic, and remedial techniques; assessment of curricular needs, assessment of learning difficulties, and utilization of instructional technology. Designed for the classroom teacher. P: jr st.

489 Research Design 3 cr.
Research design techniques as applied to educational systems; data analysis, statistical inference, and computer procedures appropriate to educational research.

496, 497, 498, 499 Special Readings in Professional Education 1-4 cr.
A readings course adapted to the individual's particular interests in the field of professional education. P: jr st and cons inst.

ENGINEERING (CES)

102 Elements of Descriptive Geometry 3 cr.
Orthographic projection and its application to analysis and solution of three-dimensional problems involving points, lines, planes, and solids; axonometric projections for pictorial representation with engineering applications. P: Mathematics 095.

113 General Engineering Graphics 3 cr.
Advanced principles of projection and perspective, sectional views, dimensioning freehand sketching, isometric and oblique pictorials, graphs and nomographs, drawings and electric circuits. Individual problems are designed to serve the interests of the student's theme college concentrations. P: Engineering 102.

302 Statics 3 cr.
Principles of mechanics, force systems, equilibrium, structures, distributed forces, moments of inertia of areas, and friction. P: Mathematics 202. (Same as Engineering Mechanics 101 at UW-Madison.)

303 Dynamics 3 cr.
Kinematics, force-mass-acceleration relations, work and energy, impulse and momentum, moments of inertia of mass. P: Engineering 102 and Mathematics 203. (Same as Engineering Mechanics 102 at UW-Madison.)

ENVIRONMENTAL SCIENCES (CES)

102 Introduction to Environmental Sciences 3 cr.
The description of the components of the ecosystem; their structure, function, and interrelationships; analysis, measurement, and management of the environment.

296, 297, 298, 299 Reading and Research 1-4 cr.
A program of selected reading and research planned in consultation with a faculty member in the subject matter area of the student's choice. A report or equivalent must be submitted for evaluation for credit approval. A short title descriptive of the program must be submitted for entry on the transcript. P: Cons inst.

310 Environmental Measurement 3 cr.
This course deals with actual measurements and determinations of important environmental variables associated with air, water, and soil as they are related to living plants and animals affected by open field, urban, and other special types of environments. Principles of sampling, data recording, and data analysis are discussed. Opportunities to install and operate specific instruments are offered, and some of the practical difficulties and limitations of each measurement are discussed and demonstrated. P: Chemistry-Physics 212 and Environmental Sciences 102. Mathematics 204 or 260 recommended.

320 Renewable Resources 3 cr.
The nature and variety of renewable resources, man's dependence upon renewable resource production and quality. P: Biology 203.

351 Climatology 3 cr.
Heat exchange near the ground; relation of topography and plant cover to the microclimate; modification of microclimate by inadvertent and conscious intervention by man. P: Chemistry-Physics 212 and Environmental Sciences 310.

420 Resource Management Strategy 3 cr.
Application of principles of ecology and conservation to the development of strategies for maintaining optimum environmental qualities. P: Biology: Ecology 302 and Earth Science 303.

430 Community Air Pollution 3 cr.
Evaluation of the impact of air pollution on the community; the community air quality survey and monitoring of community air pollution; effects of air pollutants on plants, animals, and man; on buildings, on materials; aesthetic effects of air pollution. P: Physics 450.

431 Air Pollution Control 3 cr.
Establishment of air quality criteria and air quality standards; role of federal, regional, state and local agencies in air pollution control; survey of engineering aspects of air pollution control; legal and economic considerations in air pollution control. P: Environmental Sciences 430 and Physics 450.

440 Applied Environmental Science 3 cr.
Problems of control of quality of water and air, laboratory studies of air, water, and community wastes; effects of water and airborne wastes on the environment. P: sr st in the College of Environmental Sciences.

496, 497, 498, 499 Reading and Research 1-4 cr.
A program of selected reading and research planned in consultation with a faculty member in the subject matter area of the student's choice. A report or equivalent must be submitted for evaluation for credit approval. A short title descriptive of the program must be submitted for entry on the transcript. P: jr st and cons inst.

GEOGRAPHY (CCS)

102 Approaches to Geography 3 cr.
An introduction to contemporary geography, its viewpoints and methodology. Geographic reality of the present-day world is analyzed in the form of case studies in which both the regional approach and systematic analysis are used. P: Community Sciences 102.

202 Introduction to Cultural Geography 3 cr.
A consideration of the impact of culture through time in creating the world's contrasting landscapes.

215 Economic Geography 3 cr.
A survey of patterns of economic activities, including agriculture, extractive industries, manufacturing, transportation, and trade. Major theories and concepts essential to understanding the location of economic activities are discussed.

223 Man and the Ocean of Air 4 cr.
Study of the fundamentals of the processes of the atmosphere, the resulting weather and climate, and the effects of the atmosphere on other aspects of the earth's environments and on man.

316 Geography of Transportation and Industrial Location 3 cr.
Geographic analysis of transportation and industrial location; the role of transportation in determining the location of business and industrial activities. P: jr st or cons inst.

320 Landform Geography: Topics and Regions 3 cr.
Introduction of geographic methods of landform description and analysis with application to selected regions of the world. P: jr st or cons inst.

325 Regional Climatology 3 cr.
The elements, controls, and classification of climates; the distribution of climatic types over the earth; world patterns. P: jr st or cons inst.

341 Urban Geography 3 cr.
Regional variation in form and degree or urbanization and in relations of cities to the areas they serve. P: soph st.

342 The City 3 cr.
Areal diversification of character, function, and relationships within individual cities. P: jr st or cons inst.

345 Historical Geography of Urban Places 3 cr.
Changes in the morphology, functions, and arrangement of towns and cities over time. P: jr st or cons inst.

350 Maps and Air Photos 3 cr.
Introduction to the use and evaluation of various kinds of maps; interpretation of air photos: large-scale maps and vertical air photos. P: soph st.

351 Elements of Map Making 3 cr.
The use of control, coordinate systems, compilation, and photogrammetry for medium and large-scale maps. P: jr st or cons inst.

353 Air Photo Interpretation and Use 3 cr.
The use of vertical, oblique, and infrared aerial photographs as research sources in the social and physical sciences; the theory of aerial photo measurement and photo mapping procedures. P: jr st or cons inst.

355 Introduction to Quantitative Methods of Spatial Analysis 3 cr.
A methods course covering application of selected statistical measures and computer techniques to the analysis of geographic problems. P: Community Sciences 205 or a course in applied statistics.

361 Geography of Africa 3 cr.
The broad physical and human patterns of Africa; historical aspects of geography including the imposition of colonial organization on resource use and on indigenous cultures. P: soph st.

362 Geography of the Great Lakes Region of Africa 3 cr.
A systematic analysis of the areas surrounding the Great Lakes of Eastern Africa, with emphasis on the ecological and historical bases of cultural, economic, and political diversity; the resource base with respect to economic activities and regional development. P: soph st.

371 Geography of the United States and Canada 3 cr.
A systematic analysis of the physical features, resources, people, and economic activities of the United States and Canada. The various regions of the two countries are compared and contrasted. P: soph st.

372 Geography of the Great Lakes Regions of North America 3 cr.
A systematic analysis of the areas surrounding the Great Lakes of the United States and Canada; internal and external relationships of the region; economic activities of the region; regional change and problems. P: soph st.

376 Geography of Developing Areas 3 cr.
An analysis of the geography of countries in various stages of development and the role of physical and human resources. P: soph st.

377 Geography of Northern Lands 3 cr.
A topical and regional analysis of the subarctic and arctic areas of North American and Eurasia; regional emphasis on Alaska, Northern Canada, and Greenland. P: jr st or cons inst.

378 Geography of Tension Areas 3 cr.
Investigation of the economic and political geography of areas actually or potentially dangerous to the peace of the world in an attempt to analyze underlying causes of existing tensions. P: jr st or cons inst.

498 Contemporary Problems in Geography 3 cr.
Senior seminar or tutorial on selected topics and current issues related to cultural, physical, regional, and urban geography; current geographic problems related to student's academic experiences. Integrative individual projects will be developed for student reading., research, and reports. P: pursuit of a geography option. May be repeated for credit.

For physical geography, see: **Earth Science.**

GROWTH AND DEVELOPMENT (CHB)

331 Infancy and Early Childhood 3 cr.
Review of genetic and physical factors; social, emotional, cognitive development; family and other social interaction impacts. Includes motivation and learning; personality and intellect; sex-role development. Practice in observing and recording behavior to be included. P: Psychology 102.

332 Middle Childhood and Adolescence 3 cr.
Physical growth: social, emotional, and intellectual development; learning processes and interests: school and community impacts; physiological factors, social roles, identity-crises during adolescence. P: Growth and Development 331.

333 Observation and Interpretation of Child Behavior 3 cr.
Interpretation of behavior and development during the preschool and early school years through directed observation in selected situations. P: Growth and Development 331.

334 Play and Creative Activities in Childhood 3 cr.
Concepts of the contributions of play and creative activities to physical, intellectual, emotional and social aspects of development. Specific contributions of selected creative activities examined. Systematic observation and interpretation of children's behavior in a variety of play situations. P: Growth and Development 331.

336 Sex Role Development in Contemporary Society 3 cr.
Analysis of the impact of social change on sex roles, from an interdisciplinary and developmental orientation. Effects of child rearing practices, current social demands and expectations, problems of identity resolution. P: soph st and cons inst.

430 Guidance of Preschool and Kindergarten Groups 3 cr.
Principles of programming and management of preschool groups. Necessities of space, equipment and supplies. Provision for activities in art, music, literature, science, pre-academic concept formation, manipulative-constructive and creative-expressive experiences. P: Growth and Development 334.

431 Cognitive Development and Facilitation in Childhood and Adolescence 3 cr.
An analysis of the course of development of cognitive functioning from infancy through adolescence, with particular attention to the findings of Piaget and other current investigators. Effects of the interrelationship of cognitive and conative factors will be examined, as will the implications for learning. P: Growth and Development 331 and 332 or cons inst.

432 Cultural Impacts on Human Development 3 cr.
The cultural context of socialization; class and ethnic differentials and their impact on cognitive style, value systems, interpersonal relations and personality patterning. P: Anthropology 205 and Growth and Development 332.

433 Adulthood and Later Maturity 3 cr.
Scope as in Growth and Development 331 and 332; emphasis on identity resolution, adjustment to work, marriage, parenthood, processes of old age, involving physical, intellectual, personality developments, adjustment to retirement. P: Growth and Development 332.

434 Practicum in Working with Preschool and Kindergarten Groups 4 cr.
Directed work in selected preschool milieu. Practice in applying the principles of guiding children in preschool groups. Opportunities for planning for early childhood learning experiences under supervision. Students will arrange for ten hours of participation in preschool settings per week. P: Growth and Development 433.

435 Developmental Problems and Deviations 3 cr.
Developmental deviations in childhood and in adulthood, of constitutional and of social-emotional etiology. Problems of exceptional children, children with handicaps, learning difficulties. Signs of coping difficulty. P: Growth and Development 331 and 332.

HISTORY (CCC)

202 Rise of the International Economy, 1400-present 3 cr.
The development of technology and economic institutions in Europe and their interaction with the economies of other continents and geographical regions; growth of international trade and

its importance to regional and national economies; economic significance of colonial systems and patterns of their economic development. Emphasis will be placed on the pervasive influence of the international economy on peoples of the modern world.

203 History of Europe from 1300 to 1815 3 cr.
The development of Europe from the early Renaissance to the end of the Napoleonic era; the emergence of secular nation-states.

204 History of Europe Since 1815 3 cr.
The development of continental Europe since Napoleon; French, German, and Spanish history and the creation of the modern industrial nation-state.

205 History of the United States from 1600 to 1865 3 cr.
The development of the United States from the first colonial settlements to the end of the Civil War; emergence of American national democracy.

206 History of the United States from 1865-present 3 cr.
Reconstruction, industrialism, Progressivism, and adjustment to a new society; the New Deal and State Capitalism; World War II and Pax Americana.

215 The Modernization of Russia, 1850-1917 3 cr.
Survey and analysis of social, intellectual, political, and economic developments from the mid-nineteenth century to the Bolshevik revolution. The central theme of this course is the modernization of Russia in all its ramifications. P: soph st or History 204.

302, 303 History of American Thought and Culture 3, 3 cr.
European influences on American thought, religion, science, art, and the agencies of cultural life; emergence of distinctive American patterns; influence and impact of American ideas on the world. P: jr st. Can be taken out of sequence.

304, 305 History of Asian Thought and Culture 3, 3 cr.
The evolution of Asian thought, religion, and art; the agencies of cultural life; impact of European culture; influence of Asian thought outside Asia. P: jr st. Can be taken out of sequence.

306, 307 History of European Thought and Culture 3, 3 cr.
Major currents in European culture and the development of religions, science, artistic modes, and the agencies of cultural life; the worldwide influence of European culture and impact of European ideas on other major regions. P: jr st. Can be taken out of sequence.

308, 309 History of Modern Science 3, 3 cr.
The development of science since the 16th century; changes in the conditions facing the scientist over the past four centuries; relationship of scientific discovery to technological change. P: jr st. Can be taken out of sequence.

311, 312 History of the Great Lakes Region, 1600-1960; 1960-present 3, 3 cr.
The development of the Great Lakes Region as a distinct physiographic, economic, political, and cultural region in North America. It will illustrate the historical development of such an international region within the context of traditional nationalism and international rivalry, as well as its impact and influence within the respective nations. It will also provide a frame of reference for comparison with other regions within the North American milieu. P: jr st or cons inst. Can be taken out of sequence.

315 History of Soviet Russia, 1917 to the present 3 cr.
A survey of the origins and evolution of the main ideological, political, economic, social, diplomatic, and cultural developments of Russia since the Bolshevik revolution. P: jr st or cons inst.

321 Economic History of the U.S., 1600-1876 3 cr.
Mercantilist thought and organization and the development of the American colonies; the growth of laissez-faire attitudes, the specialization of capital and labor, industrialization, and the influence of the railroads will be thoroughly covered. P: jr st or cons inst.

322 Economic History of the U.S., 1876-present 3 cr.
The development of a corporate economy and the rise of government intervention; industrial, financial, agricultural, and labor reorganization during this period; wage and price policies and their relationship to these general themes; modernization and urbanization processes and the developing relationship between the domestic and the world economy given special attention. P: jr st or cons inst.

323, 324 History of American Foreign Relations, 1776-1890-present 3 cr.
American foreign relations as a medium for the study of American history; the different facets of American values, economic structures, and political decision-making as they affect the nation's relations with the rest of the world and as the rest of the world affects them. P: jr st or cons inst. Can be taken out of sequence.

402 Political and Social History of Modern Asia 3 cr.
A critical examination of political and social change in 20th century Asia; the clash between colonialism and emerging nationalist movements; continued European and American involvement in Asia. P: jr st and one 300-level history course.

403 Political and Social History of Modern America 3 cr.
A critical examination of political and social change in 20th century America; the evolution of governmental roles in essential social change; the emergence of the United States as a world power. P: jr st and one 300-level history course.

404 Political and Social History of Modern America 3 cr.
A critical examination of political and social change in 20th century Europe; the emergence of European fascism; post-World War II changes. P: jr st and one 300-level history course.

405 History of Technological Advancement 3 cr.
An analysis of the impact of major inventions on the patterns of life in modern society; ecological problems resulting from technological changes. P: jr st and one 300-level history course.

496, 497, 498, 499 Problems in Historical Causation 1-4 cr.
A seminar or tutorial involving the careful consideration of major schools in historiography; problems in the interpretation of cultural, economic, political, scientific, and social history. P: sr st and choice of history option.

HUMAN BIOLOGY (CHB)

102 Introduction to Human Adaptability 3 cr.
Introduction to the development, nature, and processes of human adaptability.

296, 297, 298, 299 Reading and Research 1-4 cr.
A program of selected reading and research planned in consultation with a faculty member in the subject matter area of the student's choice. A report or equivalent must be submitted for evaluation for credit approval. A short title descriptive of the program must be submitted for entry on the transcript. P: Cons inst.

310 Introduction to Human Genetics 3 cr.
Principles of human genetics, genetics of populations. P: Biology 303.

320 Introduction to Population Dynamics 3 cr.
Factors controlling the size of animal and human populations, their density, and their composition; population cycles; concepts of population genetics; migration; hybridization and assortative mating. P: Biology 203.

330 Human Growth, Development, and Senescence 3 cr.
An analysis of the physical and functional events of the stages in the life sequence of the human being. P: Biology 203.

340 Human Skeleton 3 cr.
Qualitative and quantitative study of the human skeleton. P: Biology: Zoology 303 or sr st in the College of Community Sciences.

341 Human Anatomy 3 cr.
The structure of the human body; the relations of structure to function. P: Biology: Zoology 303, 310, and 311.

342 Human Evolution 3 cr.
The origin, evolution, and dispersion of the species Homo sapiens. P: Anthropology 203, Biology 203, or jr st in the College of Community Sciences. (Or may be taken as Anthropology 305.)

420 Human Mating Behavior 3 cr.
Analysis of the biological and cultural determinants of mating behavior in human populations, problems of population genetics. P: Human Biology 320 and a course in anthropology.

421 Problems in Population Regulation 3 cr.
Consideration of biological, cultural, and political problems in regulating human populations. P: Human Biology 420.

440 Racial and Genetic Variations of Man 3 cr.
The origin and description of the varieties of Homo sapiens; factors responsible for the maintenance of human diversity. P: Human Biology 342 or sr st. (Or may be taken as Anthropology 403.)

496, 497, 498, 499 Reading and Research 1-4 cr.
A program of selected reading and research planned in consultation with a faculty member in the subject matter area of the student's choice. A report or equivalent must be submitted for evaluation for credit approval. A short title descriptive of the program must be submitted for entry on the transcript. P: jr st and cons inst.

JANUARY PRACTICA

195, 295, 395, 495 January Practicum 1-3 cr.
The practicum offers students the opportunity to participate for credit in special programs designed by the faculty exclusively for presentation during January. The major focus of these special programs is on the extension of theories and concepts studied in classes to relevant and practical conditions. These special programs

may consist of a series of studies on each campus related to a contemporary and relevant theme. On-campus activities for individuals and groups, guided study tours, field trips, as well as such other activities as may be appropriate to the January time period are conducted. These activities are under the direct supervision of a faculty member. The use of credit obtained for distribution, option, or concentration requirements is subject to the approval of the dean of the appropriate college. Students ordinarily pursue one activity during January and may earn a maximum of 12 credits in four years in 195, 295, 395, and 495 programs. A catalog of specific January programs is published the previous November. P: As specified by the instructor. Offered only in January.

LEISURE SCIENCES (SPS)

302 Philosophy and Sociology of Leisure 3 cr.
The impact of increasing leisure on society, its culture, and sub-cultures; fundamental attitudes and values which have influenced the development of leisure services in various organizational and institutional settings; the emergence and development of leisure service professions. P: jr st. (Or may be taken as Sociology 310.)

303 Physiology and Psychology of Recreation 3 cr.
Concepts of the individual and his total development; the differential physiological effects of work and leisure activity; the differential effects of various kinds of recreation; the psychological motivations involved in leisure activities of various kinds and their differentiation from work motivation. P: jr st.

310 Formulating and Administering Recreation Programs 3 cr.
Practice in designing programs and establishing effective organizations for their administrations; applying valid conclusions from the philosophical, sociological, physiological characteristics of leisure usage; theories, principles, and practices of program development in public, private, and commercial operations. Includes such settings as community centers, hospitals, convalescent centers, camps, nature centers, resorts, parks, and tourist centers. P: Leisure Sciences 302 and 303.

320 Field Practicum* 2 cr.
Directed work-study experiences in selected environmental settings in the United States, Canada, or other culture; available to qualified students between junior and senior years. Oral and written reports are required. P: Leisure Sciences 302 and 303.

403 Recreation Supply and Demand Analysis 3 cr.
Actual case problems in analyzing both supply and demand for recreation: theoretical concepts, determinants of supply and demand, including treatment of the substitution effect; pricing and allocation of recreation resources and services. P: Leisure Sciences 302 and 303.

404 Public Park and Recreation Systems* 3 cr.
Policies, principles, and administrative practices involved in the planning, development, and operation of public park and recreation systems. P: sr st and Leisure Sciences 310.

410 Recreation Resource Planning in the Upper Great Lakes Region 3 cr.
Regional recreation resource planning utilizing ecological principles; resource inventory classification and allocation; forecasting demand; quantification of user-resource relationships; formulation and application of recreation planning guides; fiscal considerations. Problems orientation in the Upper Great Lakes region. P: sr st and Leisure Sciences 403.

496, 497, 498, 499 Special Readings in Leisure Sciences 1-4 cr.
A readings course adapted to the individual's particular interests in the field of recreation. P: jr st and cons inst.

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*Not offered in 1970-1971.

more than library resources. The student will identify the problems, collect the data as part of a field experience, and analyze and report the findings to the seminar group. P: Liberal Education Seminar 217.

311, 313, 315, 317 Junior Seminar 3, 3, 3, 3 cr.
The junior program focuses upon the national and world community, and cultivates awareness of cultural contrast and understanding of other value systems. The junior seminar studies and compares selected Western and non-Western cultures relevant to the student's proposed practicum, which in turn is related to his concentration-option specialization. P: Liberal Education Seminar 212, 214, 216, or 218.

312, 314, 316, 318 Cross-Cultural Practicum 3, 3, 3, 3 cr.
Opportunities for study in other areas of the United States and abroad are available to qualified students. Trips within the United States and abroad will be planned during the special studies period and during the summer. The requirement can be satisfied by participation in VISTA, the Peace Corps, or other agencies involved in cross-cultural endeavors. Students unable to travel may satisfy the requirement by a supervised intensive study of another culture of their own choice. In all cases, a written and/or oral analysis of the practicum is required. P: Liberal Education Seminar 311, 313, 315, or 317.

401-402 Senior Seminar 3, 3 cr.
The senior at UWGB has acquired broad interdisciplinary knowledge, specialization in a theme college concentration and/or option, and an acquaintance with local, national, and world communities through the sophomore and junior practica. The senior seminar focuses upon the integration and assimilation of this knowledge in a group setting where experiences and ideas are shared with others. The first semester concentrates upon the context of the student's specialization and the issues surrounding it; the second semester comes full circle to deal again with values and personal commitment. Seniors also may opt to fulfill the requirement by becoming group leaders or by team-teaching with faculty members. A senior thesis based upon the senior seminar experience is required. P: Liberal Education Seminar 312, 314, 316, or 318.

LITERATURE AND LANGUAGE: ENGLISH-AMERICAN* (CCC)

104 Introduction to Literary Types 3 cr.
A survey of major literary types (epic, lyric, ode, sonnet, ballad, types of the novel, drama, essay) through intensive analysis of literary classics. Significant contemporary works will be studied for aesthetic structure and convention.

106 Great Books 3 cr.
A study of the literary heritage and traditions of world culture, including non-Western expressions. At the discretion of the instructor, the course may emphasize literature of a particular nation.

220 Poetry in Context 3 cr.
A chronological study of the development of the more important genres of poetry and their distinctive features with comparative studies of outstanding examples of practitioners of selected forms (e.g., *Beowulf,* Milton's *Paradise Lost,* Williams' *Paterson*).

221 Dramaturgy: in Context 3 cr.
A study of the drama as a form with distinguished examples selected from the dramatic literature of Europe, England, and the United States.

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*Courses in English and American literature carry no prerequisite except consent of the instructor. Courses in which the content is at the discretion of the instructor may be repeated for credit if the content is different each time.

222 The Novel in Context 3 cr.
A study of the various forms of the novel (historical, picaresque, manners, social protest, etc.) devoted to a thematic, genristic, or period approach at the discretion of the staff.

223 Approaches to Criticism 3 cr.
The analysis of various historical, psychological, and formal approaches to the evaluation of literature. Several works chosen by the staff will be analyzed using different critical methods.

310 Dramaturgy: Major English 3 cr.
A study of the drama either by period or by theme at the discretion of the instructor.

313 Major English Prose Fiction 3 cr.
A study of the short story and/or the novel either by period or by theme at the option of the instructor.

314 Major English Poetry 3 cr.
A study of poetry either by period or by theme at the discretion of the instructor.

330 Dramaturgy: Major American 3 cr.
A study of the drama either by period or by theme at the discretion of the instructor.

331 Major American Prose Fiction 3 cr.
A study of prose fiction either by period or by theme at the discretion of the instructor.

332 Major American Poetry 3 cr.
A study of poetry either by period or by theme at the discretion of the instructor.

333 Literary Themes 3 cr.
Prose, drama, or poetry. The theme may be explored through the various forms or limited to a single form and may be international in scope.

334 Literary Isms 3 cr.
Prose, drama, or poetry of a significant literary movement such as Romanticism or Realism.

335 Literary Eras 3 cr.
Prose, drama, or poetry: the works of a number of writers studied in relation to their time (e.g., the Victorian novel).

431, 432 Dramaturgy: Shakespeare 3, 3 cr.
Shakespeare's tragedies, comedies, tragicomedies, and history plays; techniques and problems of play production as these affect interpretation.

434 A Major British Writer (or Writers) Exclusive of Shakespeare 3 cr.
An in-depth study of one or more outstanding figures in British literature. A careful analysis of the important themes, devices, and influences on the specific writer will be emphasized.

435 A Major American Writer (or Writers) 3 cr.
An in-depth study of one or more outstanding figures in American literature. A careful analysis of the important themes, devices, and influences on the specific writer will be emphasized.

436 Protest Literature in the United States 3 cr.
An interdisciplinary study of the protest literature of a particular group in America. A study of the expression of one of the following groups will form the basic content of the course: Writing of the American Revolution; Abolitionist writing; The attack on big business and government (particularly the muckraker group); Socialist and communist writing of the 1930's and 1940's; Negro writing in America; Jewish writing in America; Anti-war writing in the twentieth century.

493 English Seminar 3 cr.
A study of a major writer, literary movement, or influence in English literature. The seminar may be divided into two sections: a) before 1750, b) after 1750. Extensive research on the chosen topic will be required. This seminar or Literature and Language 494 is required for graduation with the Literature and Language Option/English major.

494 Seminar in American Literature 3 cr.
A study of a major writer, literary movement, or influence in American literature. Extensive research on the chosen topic will be required. Senior standing recommended. Either this course or Literature and Language 493 is required for

graduation within the Literature and Language Option/English major.

496, 497, 498, 499 Problems of Literature and Language 1-4 cr.
Senior seminar or tutorial on selected topics in literature related to literary theory and practice. Integrative individual projects will be developed for student reading, research, and reports.

LITERATURE AND LANGUAGE: FRENCH (CCC)

102, 103, 202, 203 Introduction to the French Language I, II, III, IV 4, 4, 4, 4 cr.
Study of the structure of the French language with conversation, reading, and writing based on the level of achievement. Courses are sequential. One year high school French equals one semester college French. 102-103 offered on an automatic pass-fail basis, except by petition.

221, 222 Introduction to French Literature 3, 3 cr.
Study of representative authors in French literature. May be taken concurrently with French 225, 226. P: French 203 or equivalent high school preparation. Can be taken out of sequence.

225, 226 French Composition and Conversation 3, 3 cr.
Development of facility in oral and written French. May be taken concurrently with French 221, 222. P: French 203 or equivalent high school preparation. Can be taken out of sequence.

317, 318 Introduction to French Culture and Civilization 3, 3 cr.
A study of characteristic periods and movements in the social, intellectual, artistic, and literary development of France. P: French 203 or equivalent. Can be taken out of sequence.

321 Nineteenth Century French Drama and Poetry 3 cr.
Critical study of dramatic and poetic works representative of main currents in nineteenth century French literature. P: French 221 and 222.

322 Nineteenth Century French Novel 3 cr.
Critical study of novels representative of main currents in nineteenth century French literature. P: French 221 and 222.

402, 403 Contemporary French Literature 3, 3 cr.
Study of major literary expressions in contemporary French novel, drama, and poetry. P: French 222. Can be taken out of sequence.

496, 497, 498, 499 Senior Seminar in French Literature 1-4 cr.
An intensive analysis of a specific writer or theme; topic to be changed each semester; may be offered as seminar or tutorial. P: French 222.

LITERATURE AND LANGUAGE: GERMAN (CCC)

102, 103, 202, 203 Introduction to the German Language I, II, III, IV 4, 4, 4, 4 cr.
Study of the structure of the German language with conversation, reading and writing based on the level of achievement. Courses are sequential. One year of high school German equals one semester university German. 102-103 offered on an automatic pass-fail basis, except by petition.

221, 222 Introduction to German Literature 3, 3 cr.
A study of representative authors in German literature; may be taken concurrently with German 225, 226. P: German 203 or equivalent high school preparation. Can be taken out of sequence.

225, 226 German Composition and Conversation 3, 3 cr.
Development of facility in oral and written German; may be taken concurrently with 221, 222. P: German 203 or equivalent high school preparation. Can be taken out of sequence.

317, 318 Introduction to German Culture and Civilization 3, 3 cr.
A study of characteristic periods and movements in the social, intellectual, artistic and literary development of Germany. P: German 203 or equivalent. Can be taken out of sequence.

327 The Age of Goethe 3 cr.
Critical study of poetry, drama, essay and novel as representative of the era; special emphasis on Goethe. P: German 221 and 222.

328 German Novelle 3 cr.
Critical study of the genre as representative in various literary periods. P: German 221 and 222.

402, 403 Contemporary German Literature 3, 3 cr.
A study of major expressions in contemporary German novel, drama and poetry. P: German 222. Can be taken out of sequence.

496, 497, 498, 499 Senior Seminar in German Literature 1-4 cr.
An intensive analysis of a specific writer or theme; topic to be changed each semester; may be offered as seminar or tutorial. P: German 222.

LITERATURE AND LANGUAGE: SPANISH (CCC)

102, 103, 202, 203 Introduction to the Spanish Language I, II, III, IV 4, 4, 4, 4 cr.
Study of the structure of the Spanish language with conversation, reading, and writing based on the level of achievement. Courses are sequential. One year high school Spanish equals one semester college Spanish. 102-103 offered on an automatic pass-fail basis, except by petition.

207, 208 Spanish Literature in Translation 3, 3 cr.
An introductory survey of the literary culture of Spain in the novel, drama, and poetry. Some knowledge of Spanish is helpful, but not required. Can be taken out of sequence.

221, 222 Introduction to Spanish Literature 3, 3 cr.
A study of representative authors in Spanish literature. May be taken concurrently with Spanish 225, 226. P: Spanish 203 or equivalent high school preparation. Can be taken out of sequence.

225, 226 Spanish Conversation and Composition 3, 3 cr.
Development of facility in oral and written Spanish. May be taken concurrently with Spanish 221, 222. P: Spanish 203 or equivalent high school preparation. Can be taken out of sequence.

317, 318 Introduction to Spanish Culture and Civilization 3, 3 cr.
A study of characteristic periods and movements in the social, intellectual, artistic, and literary development of Spain and Spanish America. P: Spanish 203 or equivalent. Can be taken out of sequence.

323 Spanish Golden Age Drama 3 cr.
Critical study of drama in the Siglo de Oro as represented by Lope de Vega, Tirso de Molina, Calderon, and others. P: Spanish 221 and 222.

324 Spanish Golden Age Prose 3 cr.
Critical study of significant prose works from the Siglo de Oro with special emphasis on Cervantes. P: Spanish 221 and 222.

402, 403 Contemporary Spanish Literature 3, 3 cr.
A study of major literary expression in Spanish contemporary novel, drama, and poetry. P: Spanish 222. Can be taken out of sequence.

496, 497, 498, 499 Senior Seminar in Spanish Literature 1-4 cr.
An intensive analysis of a specific writer or theme; topic to be changed each semester; may be offered as seminar or tutorial. P: Spanish 222.

MASS COMMUNICATIONS (SPS)

202 Media I: Introduction to Mass Communications 3 cr.
Survey of the interplay between American society and mass media, both print and broadcast; commercial, cultural, and political functions of the media, popular taste, the pseudo-environment of symbols, the concept of a free and responsible press. P: soph st.

203 Media II: Newswriting Laboratory 3 cr.
Newswriting laboratory; assignments in gathering and writing news; copy editing; emphasis on developing an objective, clear, accurate, and forceful style. Required for the professional collateral in mass communications. P: soph st.

305 Television and Radio News Writing 3 cr.
Development of basic skills required for effective newscasting and announcing. P: Mass Communications 203.

310 Television Directing and Producing 3 cr.
Objectives and methods in commercial and public service programming, including the conception, writing, and producing of individual program ideas. This is an activity course which will be conducted primarily in commercial television studios in Green Bay. An optional course for the professional collateral in mass communications. P: jr st and cons inst.

320 Interpretive Reporting 3 cr.
Development of skills in journalistic research and in-depth reporting; analysis of source and audience contexts. P: Mass Communications 203.

325 Specialized Writing 3 cr.
Development of skills in translating and interpreting material from particular fields of expertise; designed for the preparation of writers specialized in covering such fields as the physical sciences, social sciences, education, business, the arts. Open to students outside the professional collateral in mass communications; optional for the professional collateral. P: jr st and cons inst.

402 Television and Radio Internship* 3 cr.
Supervised assistance and practice in the production of radio programs and television programs at commercial stations in the Green Bay area. P: soph st and Mass Communications 310.

405 Professional Reporting Internship* 3 cr.
A field course with supervised instruction and practice reporting for a newspaper or periodical in the Green Bay area. P: sr st and Mass Communications 320 or 325.

430 Mass Media and Society 3 cr.
Analysis of the media as persuaders, informers, entertainers; public opinion, readership, and audience studies; communication theory; legal aspects; critical examination of mass communication in the changing social environment.
P: Nine credits in either Mass Communications or Communication Sciences.

*Not offered in 1970-1971.

496, 497, 498, 499 Special Readings in Mass Communications 1-4 cr.
A reading course adapted to the individual's particular interests in the field of mass communications. P: jr st and cons inst.

MATHEMATICS (CES)

095 Intermediate Algebra 2 cr.
A remedial course, also intended for students whose algebra preparation did not include the second course in high school algebra (Grade 11): setting up and solving quadratic equations and inequalities, complex numbers, rational exponents, progressions, graphing of circles and quadratic polynomials, definition and elementary properties of logarithms. Offered on an automatic pass-fail basis, except by petition. Credits do not count toward graduation.

112 College Algebra 3 cr.
A course to prepare the student for Mathematics 202: algebra of polynomial and rational functions; the function concept; theory of polynomial equations, including remainder and factor theorems; solution of simultaneous linear equations; infinite geometric progressions; mathematical induction; binomial theorem. P: Mathematics 095 or satisfactory score on placement examination.

113 Trigonometry 2 cr.
A course to prepare the student for Mathematics 202. Introduces the trigonometric functions of the real number and basic properties and graphs; equations and identities; applications to angles, triangles, and complex numbers. P: Mathematics 095 or satisfactory score on placement examination.

115 Basic Structures of Mathematics 4 cr.
Topics for teachers of elementary mathematics, including basic notations and operations in elementary arithmetic; place notation with various bases; development of the basic algorithms of arithmetic; prime, decimal, irrational, real composite numbers, divisibility; rational arithmetic and geometry. P: Mathematics 095 or satisfactory score on placement examination.

202 Calculus and Analytic Geometry I 4 cr.
Differential and integral calculus of the elementary functions with associated analytic geometry including vectors; applications. P: satisfactory score on placement examination or passing grade in Mathematics 112 and 113.

203 Calculus and Analytic Geometry II 4 cr.
Transcendental functions, techniques of integration, alternative representations; applications. P: Mathematics 202.

204 Elementary Probability 4 cr.
An introduction to probability and statistical inference making use of the calculus developed in Mathematics 202. P: Mathematics 202.

211 Calculus and Analytic Geometry III 5 cr.
Real valued functions of several variables, partial derivatives, Taylor's series, multiple integrals, improper integrals, applications. P: Mathematics 203.

250, 251 Computer Science I, II 3, 3 cr.
A lecture and laboratory course about the structure, operations and programming of a computer, application of data processing to student's areas of interest; logic decision techniques as applied to systems and procedures. Examples will be selected that are appropriate to the needs of students in each of the theme colleges. Each student may select work related to his theme concentration. Mathematics 250, Computer Science I, is required of all students who do not elect to study Calculus (Mathematics 202 and 203 or 204). The tool subject requirement can be completed by electing either Mathematics 251, 252, 260, 353 or Community Sciences 205, Social Science Statistics to follow Mathematics 250.
P: satisfactory score (to demonstrate competence in first year high school algebra) on placement examination or passing grade in Mathematics 095.

252 Machine Organization 3 cr.
An introduction to concepts involved in the design of computers and computer systems. P: Mathematics 250.

260 Elementary Statistics 3 cr.
Descriptive and Inferential statistics; frequency distributions; graphing techniques; percentiles; measures of central tendencies and of dispersion; normal distribution, correlation, regression, prediction; probability; statistical inference; analysis of variance. Applications will be processed using computer programs. P: Mathematics 250.

308 Differential Equations and Matrix Algebra 5 cr.
Elementary methods of solution, integrating factor, linear differential equations with constant coefficients, power series solutions, systems of linear differential equations, applications. P: Mathematics 211.

311 Advanced Calculus 3 cr.
Implicit function theorem; Jacobians; transformation of coordinates; functional dependence; constrained extrema and Lagrange multipliers; line, surface, and volume integrals; scalar and vector fields; gradient, divergence, and curl; divergence theorem, Stoke's theorem; applications. P: Mathematics 211.

312 Real Analysis I 3 cr.
A highly disciplined, theorem-proving course in which the concepts and methods of elementary calculus are reconsidered from an advanced point of view. Fundamental notions of limits, continuity, differentiation, and integration, for functions of one or more variables, convergence and uniform convergence of infinite series and of improper integrals; applications. P: Mathematics 211.

313 College Geometry 3 cr.
Introduction to analytic and projective geometry, including a study of the conic sections and quadric surfaces. P: Mathematics 203.

315 Intermediate Ordinary Differential Equatio 3 cr.
Systems of linear ordinary differential equations, Laplace transforms, linear ordinary differential equations with variable coefficients, boundary value problems involving nonhomogeneous linear equations, asymptotic expansions, nonlinear ordinary differential equations, numerical methods. P: Mathematics 250 and 308.

321 Linear Algebra I 3 cr.
Vector spaces and vector space isomorphisms, linear transformations, matrices and matrix operations. P: Mathematics 203.

322 Linear Algebra II 3 cr.
Equivalence relations on matrices; canonical forms for similar matrices, eigenvalues and eigenvectors, matrix orthogonalization. P: Mathematics 308 and 321.

331 Heaviside Operational Calculus 3 cr.
Heaviside calculus for recursion relations and digital systems; Heaviside calculus for integral-differential equations and analogue system; Operand convergence, operator convergence; approximation of an analogue system by a digital system. P: Mathematics 308.

332 Engineering Systems and Automatic Control 3 cr.
Basic laws of system components, analogies, system transfer functions, block diagrams, transient and steady state response characteristics, use of analogue computer, feedback and automatic control, frequency response, stability. P: Chemistry-Physics 212 and Mathematics 331 or Physics 207.

350 Numerical Analysis 3 cr.
Solutions of equations, polynomial approximations, initial value problems for ordinary differential equations; matrix inversion. Students will be encouraged to run a computer program for a problem from their concentration areas. P: Mathematics 250 and 308.

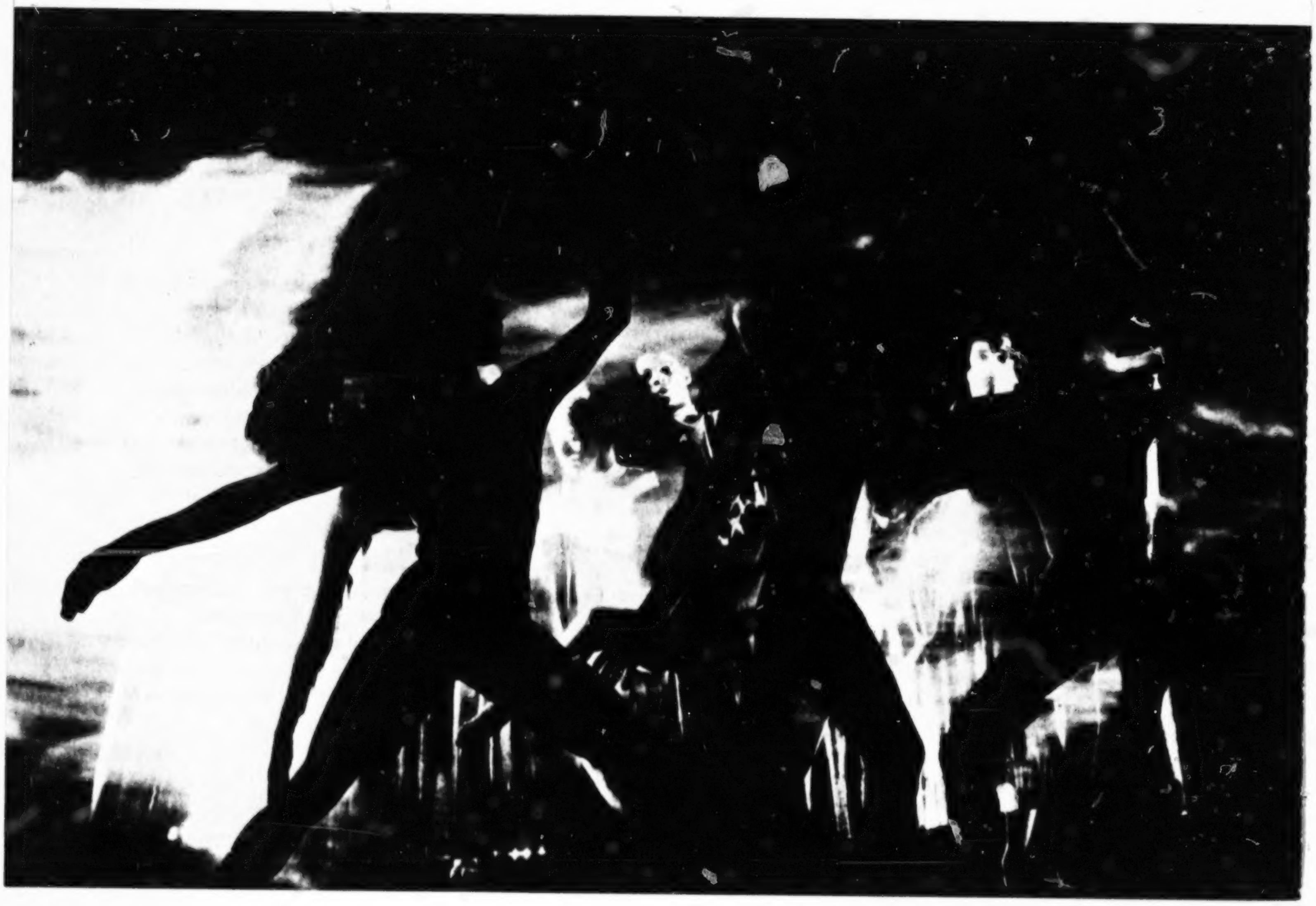
353 Advanced Programming 3 cr.
Structure of languages, and of a particular programming language, theory of compilers, evolution of a translator. P: Mathematics 250.

355 Optimization 3 cr.
Linear programming, nonlinear programming, dynamic programming, combinatorics, and calculus of variations. P: Mathematics 308 and 311.

360 Theory of Probability 3 cr.
Probability as a mathematical system, with applications, basic probability theory, combinatorial analysis, independence and dependence, distribution functions and probability laws, mean and variance of a probability law, expectation of a function with respect to a probability law, normal, Poisson and related probability laws, random variables. P: Mathematics 211.

361 Theoretical Statistics 3 cr.
Sample moments and their distributions, tests of hypotheses, point and interval estimation, regression and linear hypothesis, nonparametric methods, sequential methods. P: Mathematics 360.

366 Theory of Games 3 cr.
Introduction to von Neumann's theory of games with emphasis on the two-person zero-sum game, applications to problems of strategy, decision functions, and to linear programming. P: Mathematics 202 and 250.



403 Differential Geometry 3 cr.
Geometry of curves and surfaces in Euclidean 3-space, with extensive use of linear algebra, intrinsic geometry of surfaces, abstract surfaces, differential forms. P: Mathematics 211.

405 Numerical Analysis II 3 cr.
Boundary value problems and Eigenvalue problems, finite difference methods, energy methods, partial differential equations of second order iterative methods, stability. P: Mathematics 311, 315, and 350.

407 Algebraic Structures 3 cr.
Basic algebraic properties of groups, rings and fields, Galois theory and applications, advanced linear algebra. P: Mathematics 322.

410 Complex Analysis 3 cr.
Algebra and geometry of complex numbers, analytic functions, integration, Taylor and Laurent series, contour integration, residues, analytic continuation, conformal mapping, boundary value problems, integral transforms. P: Mathematics 311.

412 Real Analysis II 3 cr.
A continuation of the topics introduced in Real Analysis I. Lesbegue Integrals, Stieltjes' Integrals, improper integrals. P: Mathematics 312.

416 Partial Differential Equations 3 cr.
The wave equation in one and more dimensions, D'Alembert's solution, the heat equation, separation of variables in various coordinate systems, eigenvalues and eigenfunctions, Laplace's equation, functions of Green and Neumann, orthogonal functions and the general expansion problem, Sturm-Lieuville equation, Legendre polynomials, Bessel functions. P: Mathematics 308.

420 Elementary Topology 3 cr.
A course in set theory and functions; topology of the real line, plane, and general euclidean space; abstract topological spaces with properties of compactness, connectedness, and the separation axioms; metric spaces. P: Mathematics 312.

452 Systems Simulation 3 cr.
The comparison of proposed methods of operating a system through experimentation by means of the symbol manipulation capabilities of the computer, programming languages used in simulation, technical problems of simulation, statistical problems peculiar to simulation, applications. P: Mathematics 250 and 361.

NUTRITIONAL SCIENCE (CHB)

232 Nutritional Significance of Food 3 cr.
Fundamentals of human nutrition, including functions and requirements of essential nutrients; means of securing an adequate diet. Specific attention will be given to the needs of infancy, adolescence, adulthood, pregnancy and lactation, and aging. P: one year of high school chemistry or one semester of college chemistry.

302 Nutrition and Culture 3 cr.
Effects of environment and culture on food habits in historical perspective. Nutritional problems. Role of food in health and disease as related to man and the biosphere. P: Human Biology 102 or Nutritional Science 232.

303 Food Science 4 cr.
Standards of food quality, food preferences, food assay; food deterioration, adulteration, methods of preservation and packaging; problems of food preservation and distribution as related to world food needs. P: Chemistry 303 or 330 and concurrent registration in Nutritional Science 232.

305 Principles of Nutritional Science 4 cr.
Principles of normal nutrition; special requirements during growth, reproduction, and senescence; diet therapy; alterations in diet for prevention and treatment of disease. P: Biology 203, Nutritional Science 302, and concurrent registration in Chemistry 330.

403 Food Science Practicum 3 cr.*
Extra-university experience in food science, such as summer work in the foods laboratory of an

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*Not offered in 1970-71.

industrial food company. P: Nutritional Science 302.

405 Nutritional Practicum 3 cr.*
Extra-university experience in nutrition e.g., experience in field study techniques and community nutrition, in cooperation with various local and state health agencies. The student will spend a minimum of 135 hours as a student worker in nutrition, working closely with a professional nutritionist. At the completion of the work period, the student will present written and oral reports on his experience. P: Nutritional Science 305.

406 Community Nutrition* 3 cr.
Current problems in public health nutrition, food misinformation, factors leading to malnutrition of certain population groups, community programs directed toward solution of these problems, field trips. P: Nutritional Science 302 and 305.

450 Food Sanitation* 4 cr.
Control of biological, chemical, and physical environments in maintaining proper sanitation and safety of food, including milk and water; field trips. P: Biology: Microbiology 302, Nutritional Science 303, and Chemistry 330.

451 Food Chemistry 4 cr.
The chemical composition and physiochemical analysis of foods; determination of coloring materials, preservatives, and metals in foods. P: Chemistry 313, 330, and Nutritional Science 305.

PERFORMING ARTS: DANCE (CCC)

302 Introduction to the Dance 3 cr.
Theory and philosophy of dance; study and clarification of the meaning of dance as a creative performing art and as an academic discipline.

303 Dance History and Techniques 3 cr.
Phasic development of dance forms from primitive to contemporary societies; the relationship of dance to other societal and cultural developments.

304, 404 Dance Performance 3, 3 cr.
Seminar-tutorial course in dance with emphasis on performance experiences; elements of composition and form, costuming, and stage design; study and performance of completed dance works for theater production. P: Dance 303 or cons inst.

496, 497, 498, 499 Problems in Performing Arts 1-4 cr.
An opportunity for advanced students to pursue individual problems in the performing arts. Work may be done in music, dance, theater, opera. P: cons inst.

PERFORMING ARTS: DRAMA (CCC)

103, 104 Voice and Movement I, II 3, 3 cr.
Introduction to the use of voice and body in effective expression, centering upon an understanding of the voice and body as expressive instruments. Includes exercises to develop the fullest use of the performer's total instrument. Voice work required of speech, music, and theater students; movement required of dance students.

105-106, 205-206, 305-306, 405-406 Intercurricular Theater I, II, III, IV 3 cr. each
Students perform a function or functions relative to a specific production, earning credits in a particular area of theater technique. Examples: Actors study voice and movement; technicians study and execute design, lighting, or costuming; all class members study the theory and practice of the play being prepared and performed, learning about its place in literature and theater history. Credit is earned for the specific area or areas covered by the student and at the level he is performing. May be repeated for additional credit when subject matter and/or level of capability is different.

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*Not offered in 1970-1971.

107, 108 Theater Techniques I, II 3 cr.
Various elements of three-dimensional form in the visual arts as applied to creating and embodying the stage space for specific performance. May include work in particular modes of theater presentation as a part of learning historical techniques and practices in the performing arts.

131-132, 231-232, 331-332, 431-432 Theater Techniques (Acting) I, II, III, IV 3 cr. each
Investigation and practice of acting techniques as applicable to the individual student and his level of capability and to particular modes or styles of acting. Understanding and use of the actor's instrument in portraying characters in various sorts of drama. A progressive demand of competence required for enrollment at the 100-200-300-400 levels. P: Admission by audition. May be repeated at successive levels of competence.

203, 204 Dramaturgy (Literature-Theater History) 3, 3 cr.
The study of a mode or period of dramatic literature and the aspects of theater history applicable to it. Specifics covered are at the discretion of the instructor, but generally include representative dramas, dramatic theory, and theater building-stagecraft of a particular era of theatrical art.

311, 312 Dramaturgy (Playwriting) 3 cr.
A study of the craft of writing for the theater. Representative theories and playscripts are studied, but primary emphasis is upon the creation of original scripts. Student scripts are read and discussed; some are staged, in a rudimentary way, for fuller realization and evaluation.

313, 314 Advanced Dramaturgy 3, 3 cr.
An attempt to integrate the depth study of 200 level course(s) with other areas of study, both within and beyond the performing arts option and/or other options and other colleges; moving from the specific toward synthesis. Any particular semester will have a certain foci according to staff and program-student needs.

341, 342 Stage Direction 3, 3 cr.
The study of various theories and techniques of theatrical staging. Students direct scenes of varying lengths and complexity from different kinds of drama and types of staging. Study of dramas, dramatists, critics, and directors leads to staging exercises.

403, 404 Seminar in Dramaturgy 3, 3 cr.
Students group themselves in small "communities of scholars" engaged in similar or related work, calling, rather minimally, upon resources of instructor, or instructors, according to particular needs of the projects. Emphasis is upon creating an end-product of seminar-paper nature which draws together an area or areas of theater study and other disciplines.

496, 497, 498, 499 Problems in the Performing Arts 1-4 cr.
An opportunity for advanced students to pursue individual problems in the performing arts. Work may be done in music, dance, theater, opera.
P: cons inst.

PERFORMING ARTS: MUSIC (CCC)

102 Basic Musicianship 2 cr.
Musical notation, scale, and chord structure and location on keyboard; practice in sight-singing and dictation. Open to non-music students. Not accepted for credit toward the option in music.

103, 104 Beginning Harmony and Counterpoint 4, 4 cr.
Elementary study of harmony; species counterpoint in two parts; simple four-part harmonizations of chorale melodies; analysis of pertinent works; attainment of the musical skills of sight-singing dictation, keyboard harmony, and ear training. Must be taken in sequence.

110, 111 Music in Perspective 3, 3 cr.
A study of a single musical masterpiece as representative of an entire artistic period. Lectures and readings in history, art, literature, and philosophy of the period; delineation of social and intellectual climate. Open to non-music students. Can be taken out of sequence.

202, 203 Intermediate Harmony and Counterpoint 4, 4 cr.
Four-part chorale harmonizations; counterpoint in three or four parts; canons and inventions; introduction to harmony based on 19th century practice; analysis of pertinent works; attainment of the musical skills of sight-singing, dictation, keyboard harmony, and ear training. P: Music 103 and 104. Must be taken in sequence.

230, 231 Landmarks in Western Music 3, 3 cr.
A survey of the important basic musical styles from antiquity to the present. A course requirement for students in the music option; open to qualified non-music students. P: Music 103 and 104. Can be taken out of sequence.

302, 303 Advanced Harmony and Counterpoint 3, 3 cr.
The fugue; continuation of 19th century harmony; introduction to 20th century harmonic and contrapuntal practices; practice in composing in larger forms; analysis of pertinent works. P: Music 202 and 203. Must be taken in sequence.

320 Music in the United States 3 cr.
The contribution of music to the development of American culture, with emphasis on folk music; the development of jazz. P: Music 102 or equivalent.

321 Music of India and the Orient 3 cr.
A survey of the music of India and the Orient, with emphasis on its influences in contemporary art music; offered in alternation with Music 421. P: Music 102 or equivalent.

330 Music of the Baroque Period 3 cr.
Music developments of the Baroque era, based on analysis of selected works. Offered in alternation with Music 430. P: Music 231 and Music 203 or their equivalents.

331 Music of the Classic Period 3 cr.
Musical developments of the Classic period, based on analysis of selected works. Offered in alternation with Music 431. P: Music 231 and Music 203 or their equivalents.

340, 341 Analysis of Music 3, 3 cr.
A study of musical forms and structural principles from the Middle Ages to the present. Emphasis on selected periods at the discretion of the instructor. P: Music 203. Must be taken in sequence.

350 Choral Arranging 3 cr.
Voice ranges; problems in phonetics; arranging for choral ensembles and for large chorus. P: Music 203.

351 Instrumental Arranging 3 cr.
The study of the functions of orchestral and band instruments; problems in scoring for orchestra and band. P: Music 203.

421 Music of Africa and Eastern Europe 3 cr.
A survey of the music of Africa and Eastern Europe, with emphasis on its influences in contemporary art music; offered in alternation with Music 321. P: Music 102 or equivalent.

430 Music of the Nineteenth Century 3 cr.
Musical developments of the Romantic era based on analysis of selected works; offered in alternation with Music 330. P: Music 231 and Music 203 or their equivalents.

431 Contemporary Music 3 cr.
Music developments of the 20th century, based on analysis of selected works; offered in alternation with Music 331. P: Music 231 and Music 203 or their equivalents.

496, 497, 498, 499 Problems in the Performing Arts 1-4 cr.
An opportunity for advanced students to pursue individual problems in the performing arts. Work may be done in music, dance, theater, or opera. P: cons inst.

PERFORMING ARTS: MUSIC, APPLIED (CCC)

001-040 Fundamental Class Instruction, Instruments 2 cr.*
Class instruction in piano, flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, baritone, trombone, tuba, timpani, percussion, violin, viola, violincello, double bass, harp. (See chart in Timetable for individual course numbers for each instrument.) Student must see applied music committee before registration for placement and instructor.

041-080 Elementary Class or Private Instruction, Voice and Instruments 2 cr.*
Class and private instruction in voice, piano, flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, baritone, trombone, tuba, timpani, percussion, violin, viola, violincello, double bass, harp. (See chart in Timetable for individual course numbers for each instrument.) Student must audition before applied music committee before registration for placement and instructor. P: successful completion of preceeding course in sequence and cons inst.

101-140, 201-240, 301-340, 401-440 Private Instruction, Voice and Instruments 2 cr.
Private instruction in conducting, voice, piano, organ, flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, baritone, trombone, tuba, timpani, percussion, violin, viola, violincello, double bass, harp. Study of solo music literature through group or private instruction. (See chart in Timetable for individual course numbers for each instrument.) Student must audition before applied music committee before registration for placement and instructor. P: successful completion of preceeding course in sequence and cons inst.

141, 241, 341, 441 Band 1 cr.
Admission by audition. Can be repeated each semester for a total of 8 cr.

142, 242, 342, 442 Band 2 cr.
Admission by audition. Can be repeated each semester for a total of 16 cr.

143-147, 243-247, 343-347, 443-447 Band Ensembles 1 cr.
Wind, woodwind, brass, percussion, and jazz ensemble work. Admission by audition. Can be repeated each semester for a total of 8 cr. (See Timetable for individual course numbers for each group.)

151, 251, 351, 451 Orchestra 1 cr.
Admission by audition. Can be repeated each semester for a total of 8 cr.

152, 252, 352, 452 Orchestra 2 cr.
Admission by audition. Can be repeated each semester for a total of 16 cr.

153, 253, 353, 453 String Ensemble 1 cr.
Admission by audition. Can be repeated each semester for a total of 8 cr.

171, 271, 371, 471 Chorus 1 cr.
Admission by audition. Can be repeated each semester for a total of 8 cr.

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*The student who chooses a music option will not receive option credit for applied music courses below the 100 level in his primary applied area. The student may receive credit for required or elected applied music courses below the 100 level outside of his primary applied area.

172, 272, 372, 472 Chorus 2 cr.
Admission by audition. Can be repeated each semester for a total of 16 cr.

173-176, 273-276, 373-376, 473-476 Vocal Ensembles 1 cr.
UWGB Singers, mens glee club, womens glee club, voice ensemble. Admission by audition. Can be repeated each semester for a total of 8 cr. (See Timetable for individual course numbers of each group.)

PHILOSOPHY (CCC)

102 Contemporary Moral Philosophy 3 cr.
The critical examination of modern answers to questions regarding the nature of the right and the good; the meaning of "moral obligation."

103 Theories of Valuation 3 cr.
A critical examination of major theories of valuation, especially in moral philosophy and philosophy of art; problems of verification.

111 Descriptive Logic 3 cr.
A study of the principles of right reasoning; the ways people misuse language; creative potentialities of clear thinking in science; the formation of value judgments.

202 Ethical Relativism 3 cr.
A critical examination of the philosophical varieties of moral relativism, their consequences for traditional theories and their roots in psychology and anthropology. P: 3 cr in philosophy.

203 Contemporary Aesthetic Philosophy 3 cr.
A critical examination of contemporary philosophies of art and art criticism. P: 3 cr in philosophy.

204 Man, Religion, and Society 3 cr.
Critical survey of theories about the sources of religion in the individual and in society; the consequences of religion for the individual and society. P: 3 cr in philosophy.

205 Freedom, Fate, and Choice 3 cr.
Critical survey of the problem of freedom of the will; the ideas of Mill, James, Russell, and Sartre. Issues are examined as to sources, the problem of clarification, the problem of arriving at a reasonable solution. P: 3 cr in philosophy.

206 Belief, Knowledge, and Truth 3 cr.
Study of the grounds of rational belief and knowledge and the methods of obtaining them; the problems of evidence and truth. P: 3 cr in philosophy.

302 History of Ancient Philosophy 3 cr.
Critical study of the ideas of major philosophers from the pre-Socratics to Augustine; Plato and Aristotle and their relevance to contemporary problems. P: jr st.

303 History of Modern British and Continental Philosophy 3 cr.
Critical study of major philosophical ideas of the modern age; Descartes and the early Empiricists and idealists; Locke, Hume, Berkeley. An understanding of the ways in which the ideas studied have influenced the formation of contemporary values and beliefs is developed and formulated. P: jr st and 3 cr in philosophy.

304 History of American Philosophy 3 cr.
An historical and critical survey of the American philosophical tradition, focusing on those elements of American philosophy which are distinctively American (e.g. transcendentalism, pragmatism) and their relevance to present-day problems. P: jr st and 3 cr in philosophy.

305 History of Asian Philosophy 3 cr.
An historical and critical survey of the great philosophies and religions of Asia; contemporary manifestations. P: jr st and 3 cr in philosophy.

306 Linguistic Analysis 3 cr.
A critical examination of the functions of language and relationships between language and philosophical problems; role of language analysis in the solution of philosophical problems; the works of Ludwig Wittgenstein. P: jr st and 3 cr in philosophy.

310 Philosophy of Mind 3 cr.
A critical study of the nature of mind and its relation to body and matter; recent movements in psychology and philosophy. P: 3 cr in philosophy.

496, 497, 498, 499 Contemporary Problems in Philosophy 1-4 cr.
A seminar or tutorial required of senior students in the philosophy option, including critical analysis of current philosophical problems of interest to the class and instructor. An effort is made to integrate work in the philosophy option and to direct the results of such work to the solution of the problems discussed.

PHYSICAL EDUCATION

The instructional program in physical activities is conducted by the Office of Sports and Recreation. Elective one-credit courses are offered to the student who desires to learn a new skill, to improve his ability in a particular activity, and/or to improve his personal fitness. In addition, these courses tend to satisfy the physical education requirements of other institutions.

Instruction not only develops personal skills but also provides knowledge and insight into the nature of human movement and the physiological effects each activity elicits. Skill and knowledge tests measure capacities, progress, and under - standings. The ultimate objective is to establish the habit of engaging in regular physical exercise.

The student is required to show evidence of personal fitness (University physical examination) for the activity selected. Classes meet twice a week, with the exception of First Aid, which offers Red Cross and Civil Defense certification and meets three times a week.

One-credit offerings are available in a variety of physical activities each semester, depending upon staff capabilities, facilities, and student interest. Several activities may be combined into a one-semester course. The student should consult each semester's Timetable for specific offerings. Selections are made from the following list:

Aquatics. Beginning swimming, advanced swimming, senior life saving, water safety instruction, synchronized swimming, spring board diving, skin and scuba diving.

Boating and sailing. Boating and canoeing, crew, sailing, water skiing.

Dance. Ballet, folk, jazz, modern, rhythmical gymnastics, social, square, tap.

Exercise and fitness. Individual exercise and running, weight training, cycling.

Individual sports. Archery, bowling, fencing, golf, judo, karate, track and field, wrestling.

Outdoor education. Camp craft, fishing and casting, shooting.

Personal and community health. Adaptive activities, first aid, fitness and diet, relaxation.

Racket skills. Badminton, lawn tennis, handball, squash, paddleball, paddle rackets.

Sports officiating. Basketball, baseball/softball, football, gymnastics, swimming and diving, track and field, volleyball, wrestling, soccer.

Team sports. Basketball, field hockey, football, lacrosse, soccer, softball/baseball, speedball, volleyball.

Tumbling and apparatus. Tumbling, trampoline, gymnastics.

Winter sports. Curling, figure skating, speed skating, ice hockey, skiing, snowshoeing.

PHYSICS (CES)

110, 111, 112 Chemistry-Physics 5, 5, 5 cr.
(See Chemistry-Physics)

110, 211, 212 Chemistry-Physics 5, 5, 5 cr.
(See Chemistry-Physics)

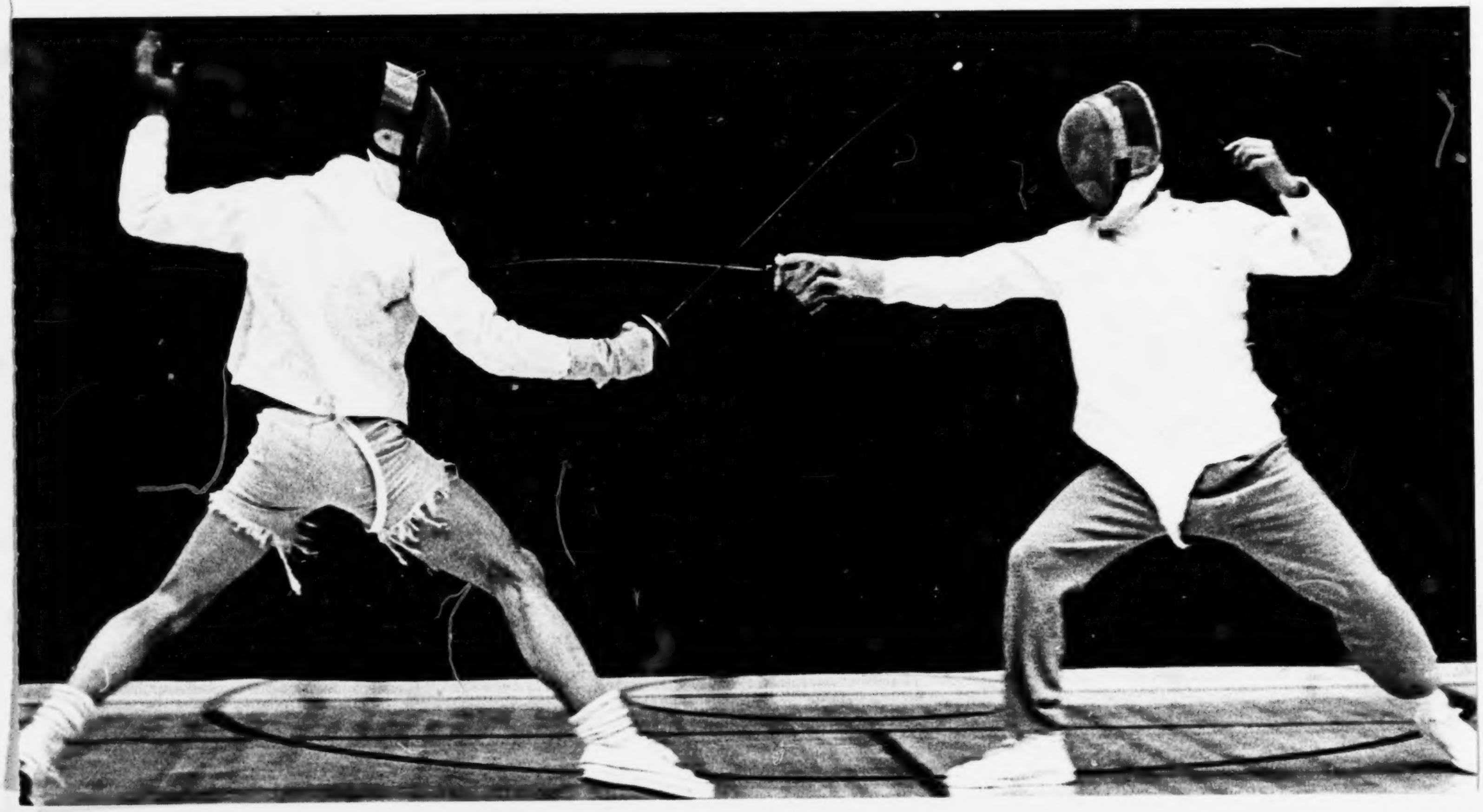
302 Electromagnetic Radiation 4 cr.
A study of electromagnetic radiation starting from Maxwell's equations; the electromagnetic spectrum; geometrical and physical optics; optical instruments; interference, diffraction, and polarization; microwave technology; x-ray technology; special topics. P: Chemistry-Physics 212.

303 Mechanics 3 cr.
Origin and development of mathematical physics; mathematical techniques, especially the use of vectors, tensors, Fourier analysis, and generalized co-ordinates in physical problems; conservation laws and their relationship to mechanical problems; the physical basis of control and feed back; introduction to rigid body dynamics, accelerated co-ordinate systems, introduction to fluid dynamics, introduction to acoustics.
P: Chemistry-Physics 212 and concurrent registration in Mathematics 308.

304 Electricity and Magnetism 4 cr.
Direct current circuits; alternating current circuits; theory of electric and magnetic fields; electromagnetic induction; magnetic properties of material; dielectric properties of matter; Maxwell's equations and electromagnetic waves.
P: Chemistry-Physics 212 and Mathematics 211.

305 Electronic Aids to Measurement 4 cr.
Fundamentals of electronics, electronic elements, basic circuits; combinations of these into measurement and control instruments. P: Chemistry-Physics 212.

306 Biophysics 3 cr.
The application of physical principles to the understanding of biological phenomena; the physical basis of life; inter- and intra-cellular processes; the role of mechanics, light, electricity, and sound in biology; the physical basis of vision, muscle, hearing, nerves, and brain function; the physical factors in the relationship of an organism to its environment. P: Concurrent registration in Biology 203 and Chemistry-Physics 212 or equivalent or cons inst.



310 Modern Physics I 3 cr.
A study of relativity, black-body radiation, atomic structure of matter, atomic and molecular spectra, introduction to quantum theory, x-ray spectra. P: Chemistry-Physics 212.

312 Modern Physics II 3 cr.
Continuation of Physics 310. Nuclear structure, radioactivity, experimental techniques using radioactive isotopes, nuclear reactions, mechanical, thermal, electrical, and magnetic properties of solids. P: Physics 310.

311, 313 Advanced Laboratory Physics 2, 2 cr.
Experience with important research techniques and apparatus with emphasis on independent work; high vacuum, particle counters, ionization chambers, photoelectricity, x-rays, magnetic resonance, temperature measurement, photographic and emulsion techniques. P: Cons inst.

320 Thermodynamics and Kinetic Theory 3 or 4 cr.
(See Chemistry-Physics 320)

340 Fluid Mechanics 3 cr.
Fundamental mechanical and thermodynamic behavior of fluids; the statics and dynamics of compressible flow, viscous flow and incompressible flow; boundary layer problems. P: Chemistry- Physics 320.

350 Meteorology 3 cr.
Introduction to atmospheric processes, their nature, and their measurement. P: Chemistry-Physics 212.

440 Soil Physics 3 cr.
The structure and physical constitution of soils; physical laws governing the infiltration, drainage, and flow through porous media; factors affecting the composition, exchange, and movement of gases in the soil; heat flow and soil temperature. P: Chemistry-Physics 212, 320, and Earth Science 320.

450 Air Pollution Meteorology 3 cr.
The application of meteorological principles to the accumulation and dispersal of biologically important materials; plant pathogens, aeroallergens, dust, and emissions from man's technological devices. P: Physics 350.

POLITICAL SCIENCE (CCS)

103 Introduction to Political Analysis 3 cr.
The nature and function of political science; politics as a cultural phenomenon. P: Community Sciences 102.

202 State Government and Public Policy 3 cr.
The federal system; legal bases and behavior of state, intrastate and interstate, county, and local structures; functions of all levels of government. P: soph st.

203 Politics of Developing Systems 3 cr.
Political processes in contemporary developing systems; problems of nation building; the formulation of cross-national comparisons and emerging patterns of regional cooperation. P: soph st.

204 Comparative Bureaucratic Behavior 3 cr.
The role and impact of bureaucracies in the development of contemporary political systems. P: soph st.

213 Urban Politics 3 cr.
Organization and politics of city government; changing political structures and leadership patterns in urban areas; consideration of urban policy problems. P: soph st.

302 Community Political Behavior 3 cr.
A description and analysis of major trends in American local politics; behavior of major structures and local associations. Some field experience will be provided. P: jr st.

303 Elections and Voting Behavior 3 cr.
Psychological and social elements in voting behavior; current electoral trends; role of voters in the government process. P: jr st.

304 Comparative Political Systems 3 cr.
An introduction to comparative political analysis

stressing both essential structures and functions. Modes of analysis will be illustrated by reference to the British, French, Russian and other political systems. P: jr st.

305 Political Systems of the Commonwealth 3 cr.
An analysis of problems of institutional transfer by specific reference to the experience in systems once a part of the British Empire. Case materials will be drawn from the Canadian, Indian, Nigerian, and other systems. P: jr st.

306 International Political Systems and Processes 3 cr.
Analysis of international political systems: balance of power, collective security, deterrence; the major political processes sustaining such systems. P: jr st.

307 Concepts in Political Theory 3 cr.
An analysis of the nature of conceptual thought about politics; examination of various problematic concepts of traditional and scientific theory: power, authority, community, justice, and other concepts. P: jr st.

310 Labor Unions in America 3 cr.
The history and development of labor unions in private business and in government service; present status of unionization. P: jr st. (Or may be taken as Labor Relations 310.)

320 Practice of Public Administration 3 cr.
The management of physical and human resources in the execution of public policy; relationship between policy determination and policy administration; leadership, control, and accountability. P: jr st. (Or may be taken as Organization and Operations 320.)

321 Politics of Bureaucratic Responsibility 3 cr.
A description and analysis of the role of bureaucracies in various political systems, focusing on problems of bureaucratic responsibility. P: jr st.

402 Political Values and Ideologies 3 cr.
A critical examination and analysis of assumptions and characteristics of modern ideologies; application of contemporary philosophical analysis to such systems of belief as are found in communism, facism, and democracy; the role of values in determining individual and group political behavior. P: jr st and one course in political science or philosophy at the 300 level.

403 Foundations and Problems of International Politics 3 cr.
A description and analysis of contemporary international politics stressing the wide variety of approaches to such a study. P: jr st and one political science course at the 300 level.

404 American Foreign Economic and Military Policies 3 cr.
Examination of the role of economic and military policies in efforts by the United States to assure security, international stability, and economic development. P: jr st and one political science course at the 300 level.

405 American Executive Behavior 3 cr.
Analysis of the patterns of executive behavior at the local, state, and national levels in the United States; interplay of administration and partisan politics; influence of variations in structural arrangements. P: jr st and one political science course at the 300 level.

426 American Legislative Process 3 cr.
Description and analysis of procedures through which American national and state legislatures arrive at legislation; group behavior of representative bodies in the contemporary United States. P: jr st and one political science course at the 300 level.

472 Parties and Pressure Groups 3 cr.
Description and analysis of the role of parties and pressure groups in the American political system; techniques employed in advancing their interests. P: jr st and one political science course at the 300 level.

498 Contemporary Problems in Political Science 3 cr.
Senior seminar or tutorial on selected topics and current issues in political science related to

American political behavior, comparative politics, international politics, political analysis and public administration; applications and limitations of political research to community problems. Integrative individual projects will be developed for student reading, research, and reports. P: pursuit of political science option. May be repeated for credit.

PSYCHOLOGY (CCS)

102 The Behavior and Experiences of Man 3 cr.
Introduction to general psychology and the psychology of individual differences; examination of basic and complex processes; problems in systematic study of objective and subjective data. P: Community Sciences 102.

202 Introduction to Social Psychology 3 cr.
Introduction to social psychology, including attitude formation and attitude change; group processes, communication, roles, multiple group membership, social prejudice. P: soph st.

205 Psychology of Human Adjustment 3 cr.
Personality adjustment and maladjustment in normal persons; need, frustration, and conflict; adjustive techniques; analysis and rehabilitation. P: soph st.

206 Experimental Psychology 3 cr.
Experimental designs applied to psychological problems; individual and group projects. P: soph st.

306 Psychology of Perception 3 cr.
Nature of perceptual processes and their functional relationships to environmental, behavioral, and central factors such as motivation, learning, and personality. P: jr st.

309 Psychology of Motivation 3 cr.
Development of motives in childhood; group attractions and pressures; special problems of motivation in industry and advertising; general problems of physiological basis of motives; changing of motives and conflict. P: jr st.

314 Industrial Psychology 3 cr.
Human personality, behavior organization, and human relations in terms of the nature of work and its evolution in society; analysis of biosocial evolution of man in work. P: jr st.

320 Personnel Psychology 3 cr.
Selection, classification, and placement procedures; techniques of employment interviewing, rating methods, industrial tests (mechanical, clerical, trade), job analysis, and occupational description; lecture and laboratory work. P: jr st.

335 Psychology of Attitudes and Public Opinion 3 cr.
Analysis of attitudes; social factors in the formation and change of attitudes; expression of attitudes in public opinion, voting and consumer behavior; polling techniques and problems. P: jr st.

337 Social Behavior Dynamics 3 cr.
Important factors in social behavior, roles, multiple group membership, cognitive processes, motivation, aggression, social prejudice. P: jr st and Psychology 202.

338 Psychology of Learning 3 cr.
Basic principles of conditioning and learning; functional relationships between salient variables related to rate of acquisition and degree of retention, transfer effects and related phenomena. P: jr st and Psychology 102 or cons inst.

415 Organization Psychology 3 cr.
Relation between social structure and psychological behavior, problems of bureaucracy, leadership styles, communication networks, decision-making processes, group productivity. P: sr st.

416 Psychology of Intergroup Relations 3 cr.
The psychology of conflict and cooperation, cleavage, and integration; principles and applications in industrial organizations, cross-generation adjustments, race relations, and international relations. P: sr st.

417 Thinking and Problem Solving 3 cr.
Methodological problems and experimental results in concept formation, language, thinking, and problem solving. P: sr st and Psychology 206.

438 Group Dynamics 3 cr.
Psychological principles as they apply to the individual in social groups, experimental analyses of group formation, maintenance, morale, and productivity. P: sr st and Psychology 202.

498 Contemporary Problems in Psychology 3 cr.
Senior seminar or tutorial on selected topics and current issues in psychology related to concerns with psychological theory; industrial psychology and social psychology; values, uses, and limitations of psychological concepts in community problems. Integrative individual projects will be developed for student reading, research, and reports: P: pursuit of psychology option. May be repeated for credit.

For developmental psychology, see: **Growth and Development.**

SOCIAL SERVICES (SPS)

202 Introduction to Social Work 3 cr.
The role of social work in modern society; field methods, principles, scope of the social services. P: soph st.

203 Social Welfare Programs of the National, State and Local Government 3 cr.
Nature, development and administration of social insurance, public assistance, categorical aids, poverty programs, and urban redevelopment. P: soph st.

302 Methods of Public Welfare Investigation 3 cr.
The role of the social worker in understanding and helping clients; techniques of interviewing; analyses of cases; agency policy and the choice of suitable social services. P: Social Services 202 or 203 and jr st.

310 Child Welfare 3 cr.
Problems of dependent, neglected, and delinquent children; methods of study and treatment policies by private agencies, and by federal, state, and local governments. P: Social Services 202 or 203 and jr st.

402 Field Experience in a Social Service Agency* 3 cr.
Actual social service work through placement in a social service agency; weekly seminar meetings and written reports. P: Social Services 302 and sr st.

405 Probation and Parole 3 cr.
The history and theory of probation and parole; methods for treating offenders; investigation for probation; eligibility, selection, supervision, and termination of parole. P: Social Services 302 and sr st.

410 Social Programs and the Aged* 3 cr.
An historical consideration of the role of old people in society; the changing position of the aged in American society; problems of the aged and methods of administration. P: Social Services 302 and sr st.

496, 497, 498, 499 Special Readings in Social Services 1-4 cr.
A readings course adapted to the individual's particular interests in the field of social services. P: jr st and cons inst.

SOCIOLOGY (CCS)

102 The City 3 cr.
Introduction to social systems through a focus on problems of urbanization. P: Community Sciences 102.

202 Introduction to Sociological Analysis 3 cr.
Introduction to major sociological theories and their application to contemporary problems of society. P: soph st.

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*Not offered in 1970-1971.

203 Problems of American Minority Groups 3 cr.
Character of racial, religious, and ethnic minority groups; social and economic adjustments in American society; the roles of private and public agencies. P: soph st.

204 Collective Behavior 3 cr.
Analysis of the dynamics of social movements, mobs, crowds, masses; voluntary and compulsory associations; power structure; group responses to varieties of leadership. P: soph st.

205 Social Change 3 cr.
Social change in community and society with emphasis upon the rate, direction, mechanisms, and planning of change in modern and emerging nations. P: soph st.

302 Social Stratification 3 cr.
Occupation, class, and status as determinants of group interests, ideologies, and struggles; selected international comparisons. P: jr st.

303 Theories of Societal Development and Change 3 cr.
Analysis of theories of social change with reference to contemporary patterns in developing areas of the world. P: jr st.

304, 305 Processes of Deviant Behavior 3, 3 cr.
Factors and conditions which underlie disagreement about fundamental values; relation of values to personal and social maladjustment; evaluation of various theories of deviant behavior; deviant behavior in different societies; group approaches to social reintegration. P: jr st. May be taken in sequence, in reverse order, or independently.

306, 307 Concepts of Social Analysis 3, 3 cr.
Survey and analysis of theories concerning society; forms of sociological analysis. Second semester is devoted to 20th century thinkers and ideas. P: jr st. May be taken in sequence, in reverse order, or independently.

308 Marriage and Family 3 cr.
Nature of the family; processes of courtship and marriage interaction; correlation of physiological, psychological, economic, and sociological contributions to marriage and family life. P: jr st.

310 Philosophy and Sociology of Leisure 3 cr.
The impact of increasing leisure on society and its sub-cultures; attitudes and values which have influenced the development of leisure services in organizational and institutional settings; emergence and development of leisure service professions. P: jr st. (Or may be taken as Leisure Sciences 302.)

402 World Populations 3 cr.
Population size, distribution, composition, and processes; social and economic determinants and consequences of demographic variations. P: jr st and one course in sociology at the 300 level.

403 Demographic Characteristics of the Upper Great Lakes Region 3 cr.
Description and analysis of population characteristics of the Upper Great Lakes region; past aspects and future trends in relation to resources and potential. P: jr st and one course in sociology at the 300 level.

404 Criminology 3 cr.
Crime as a form of deviant behavior; its relation to societal values and social structure; behavior systems and types of criminal behavior; theories of treatment and control. P: jr st and one sociology course at the 300 level.

405 Rural-Urban Interaction 3 cr.
Relationships between rural and urban social patterns; problems of adjustment to city life. P: jr st and one course in sociology at the 300 level.

406 Comparative Social Systems 3 cr.
Contemporary social systems; distinctions and broad cross-cultural comparisons between Western and non-Western systems. P: jr st and one sociology course at the 300 level.

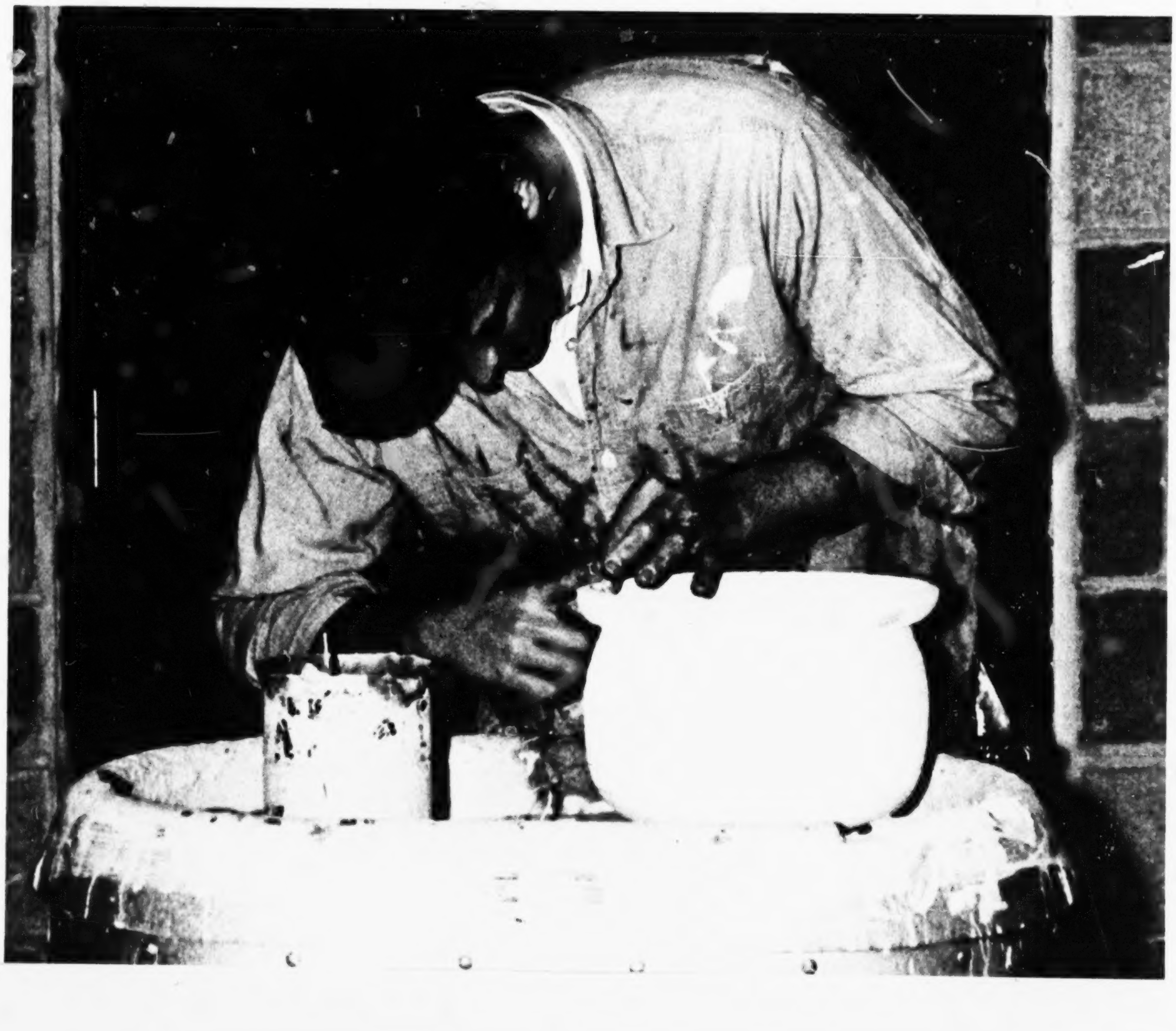
407 Complex Organization 3 cr.
Major theories relating to structures and processes of large-scale formal organizations; consideration of industrial-commercial, governmental, religious, military, political, and educational organizations. P: jr st and one sociology course at the 300 level.

446 Juvenile Delinquency 3 cr.
Characteristics of delinquency; explanatory theories; programs for prevention and control; role of police, courts, correctional schools, community agencies. P: jr st and one sociology course at the 300 level.

498 Contemporary Problems in Sociology 3 cr.
Senior seminar or tutorial on selected topics and current issues in sociology; demography, deviant behavior, social organization, social theory; applications and limitations of sociological research to community problems; integrative individual projects. P: pursuit of sociology option. May be repeated for credit.

VISUAL ARTS (CCC)

102 Design and Drawing Studio I 3 cr.
Basic structure of art with emphasis on visual perception through studio work in two-dimensional design and drawing.



103 Design and Drawing Studio II 3 cr.
Basic structure of art with emphasis on visual perception through studio work in two and three-dimensional design and drawing in black and white and color.

104 Advanced Design and Drawing Studio 3 cr.
Advanced problems of art with emphasis on visual perception through work in three-dimensional design. P: Art 103.

201 Introduction to Painting 3 cr.
Investigation of painting media; oil, watercolor and acrylics and their inherent expressive qualities and characteristics.

202 Introduction to Ceramics 3 cr.
Investigation of ceramics media and their inherent expressive qualities.

203 Introduction to Sculpture 3 cr.
Investigation of sculpture media and their inherent expressive qualities.

303, 304 Watercolor Painting 3 cr.
Creative approach to water color techniques; cultivation of personal expression and development of imaginative concepts. P: Art 201.

305, 306 Graphic Arts: Relief Printing 3, 3 cr.
Aspects of relief printing: woodcut, collage print, and linoleum cut; relief printing in full color. P: Art 201.

307, 308 Graphic Arts: Intaglio Printing 3, 3 cr.
Studio work in intaglio techniques, including dry point, engraving, and various etching procedures. Various color printing techniques are taught and the development of a personal concept encouraged. P: Art 201.

311, 312 Oil Painting 3, 3 cr.
Cultivation of techniques for personal expression; composition and development of imaginative concepts in oil paint and allied media. P: Art 201.

321, 322 Sculpture 3, 3 cr.
Studio course with an emphasis in the use of clay, plaster, and other media. Traditional and innovative methods will be investigated giving the student a fundamental understanding of sculptural form. P: Art 203.

331, 332 Ceramics 3, 3 cr.
Laboratory course introducing basic methods of forming clay, including pitch, coil, and slab methods and throwing on the wheel. A study of ceramic chemicals and glaze calculations; glaze application; stacking and firing the kiln. P: Art 202.

361, 362 Life Drawing and Anatomy 3, 3 cr.
The skeletal structure as well as the muscular articulation of the human and animal forms as a basis for artistic interpretation. P: Art 102, 103.

409 Materials Workshop for the Designer 3 cr.
Investigation of various materials of the designer and techniques of fabrication with these materials. P: 6 cr in design.

410 Materials Workshop for the Painter 3 cr.
Investigation and demonstration of painting media; the chemistry of paint; framemaking; preparation of painting grounds; underpainting, glazing. P: Art 102, 103 and a course in painting.

411 Materials Workshop for the Sculptor 3 cr.
Study of techniques and equipment; construction of tools; investigation of materials, traditional and innovative, as related to needs and aesthetic considerations of the sculptor. P: 6 cr in sculpture.

480, 481 Introduction to Environmental Design 3, 3 cr.
Investigation of environmental content in three-dimensional art; various relationships between man and form in terms of scale, texture, light, and other design phenomena. P: Art 409.

496, 497, 498, 499 Problems in Visual Expression 1-4 cr.
Problems of special interest to the advanced student in the visual arts. P: Selection of visual arts option.

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Edward H. Storey, Dean, College of Creative Communication
Richard M. Fontera, Executive Director of University Academic Programs
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William A. Schmidtke, Dean, Marinette County Campus
Leander J. Schwartz, Acting Dean, Fox Valley Campus
James H. Mildes, Campus Planner and Architect

THE UNIVERSITY OF WISCONSIN–GREEN BAY FACULTY AND STAFF

Aaronson, Jon P., Instructor in Political Science; Urban Analysis; M.A., Michigan State.

Abraham, Jerome B., Assistant Professor of Performing Arts: Music; Communication–Action; M.M., UW–Madison.

Abrahams, Paul P., Assistant Professor of History; Analysis-Synthesis; Ph.D., UW–Madison.

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Anderson, Raymond E., Lecturer in Psychology; Ph.D., UCLA.

Armstrong, Forrest H., Assistant Professor of Political Science; Urban Analysis (Acting Chairman); M.A., Michigan.

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Backes, Cyril, Institution Business Administrator; Oshkosh Business College.

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Bauer, Robert J., Director of Bands; M.S., Minnesota.

Beaton, John R., Dean, College of Human Biology; Professor of Biology; Nutritional Science; Ph.D., Toronto.

Bedrosian, Allen, Assistant Professor of Earth Science; Environmental Control; Ph.D., Rutgers.

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Bodolay, Geza, Branch Campus Librarian, Manitowoc; M.A., Kansas State (history); M.A., Michigan (library science).

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Bouc, Charles A., Assistant Professor of Engineering; Environmental Control; M.S., Illinois.

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Culross, Michael G., Lecturer, Liberal Education Seminars; M.A., Syracuse.

Cushman, Edgar J., Media Specialist.

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Dang, Nghiem, Visiting Professor of Political Science and Administration; License en droit, Paris.

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Hartley, Ruth E., Professor of Education; Human Development (Chairman); Ph.D., Columbia.

Harvey, William R., Lecturer in Mathematics; Ecosystem Analysis; M.S., Michigan.

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Hawley, Charlotte M., Library Specialist; B.A., Florida Presbyterian.

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Heit, Siegfried, Lecturer in Literature and Language; M.A., North Dakota.

Henry, John R., Visiting Artist, Visual Arts.

Hermans, Vincent, Lecturer in Business Administration; B.A., St. Norbert.

Herning, John G., Lecturer in Geography; Regional Analysis; M.S., UW–Madison.

Herrick, Daniel L., Instructor in Mathematics; Environmental Control; M.S., [illegible].

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Hieber, Shirley K., Lecturer in Literature and Language: Spanish; Analysis-Synthesis; M.A., UW–Madison.

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Ihrke, Charles, Assistant Professor of Biology: Microbiology; Population Dynamics; M.S., Omaha.

Imber, Arthur; Assistant Professor of Art Education; M.A., Mills.

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1970-1972 Calendar

Fall Semester	**1970-1971**	**1971-1972**
Registration and new student period (or register by mail earlier)	Aug. 27-28 (all campuses) Aug. 26-29 (Green Bay)	Aug. 26-27 (all campuses) Aug. 25-28 (Green Bay)
Classes Begin	Aug. 31	Aug. 30
Labor Day (holiday)	Sept. 7	Sept. 6
Monday (Labor Day) classes meet	Sept. 12	Sept. 11
Thanksgiving (holiday)	Nov. 26	Nov. 25
Thursday (Thanksgiving) classes meet	Nov. 21	Nov. 20
Last day of classes	Dec. 11	Dec. 10
Final examinations	Dec. 14-19	Dec. 13-18
Graduation	Dec. 20	Dec. 19
Christmas recess	Dec. 20-Jan. 3	Dec. 19-Jan. 2

Special Studies Period		
Begins	Jan. 4	Jan. 3
Ends	Jan. 29	Jan. 28

Spring Semester		
Registration and new student period (or register by mail earlier)	Jan. 25-26 (all campuses) Jan. 25-28 (Green Bay)	Jan. 24-25 (all campuses) Jan. 24-27 (Green Bay)
Classes begin	Feb. 1	Jan. 31
Spring recess	April 11-18	April 2-9
Last day of classes	May 21	May 19
Final examinations	May 24-29	May 22-27
Graduation	May 30	May 28

Summer Session	**1970**	**1971**	**1972**
Registration and new student period (or register by mail earlier)	June 11-12 (all campuses)	June 10-11 (all campuses)	June 8-9 (all campuses)
Classes begin	June 15	June 14	June 12
Independence Day (holiday)	July 4	July 5	July 4
Last day of classes (finals)	Aug. 7	Aug. 6	Aug. 4
Graduation	None	Aug. 7	Aug. 5